



SEQUENCE LISTING

<110> Chiron SRL
Norais, Nathalie
Grandi, Guido

<120> Unexpected Meningococcus Surface Proteins

<130> P032364WO

<140> PCT/IB03/06281
<141> 2003-11-17

<150> GB0226734.2
<151> 2002-11-15

<150> GB0307131.3
<151> 2003-03-27

<160> 217

<170> SeqWin99, version 1.02

<210> 1
<211> 403
<212> PRT
<213> Neisseria meningitidis

<400> 1
Met Ala Phe Leu Lys Leu Thr Glu Gln Asn Val Gln Gly Lys Thr Val
1 5 10 15
Leu Ile Arg Ala Asp Met Asn Val Pro Phe Lys Asp Gly Lys Ile Ser
20 25 30
Asp Asp Thr Arg Ile Arg Ala Ser Leu Ala Ser Ile Lys Tyr Cys Val
35 40 45
Asp Asn Gly Ala Ser Val Ile Val Met Thr His Leu Gly Arg Pro Thr
50 55 60
Glu Gly Glu Phe His Pro Glu Asp Asp Val Ala Pro Val Ala Ala His
65 70 75 80
Leu Gly Ser Leu Leu Gly Lys Asp Val Lys Val Leu Asn Asp Trp Arg
85 90 95
Glu Asn Lys Pro Ala Leu Asn Ala Gly Asp Val Val Met Leu Gln Asn
100 105 110
Val Arg Ile Asn Lys Gly Glu Lys Lys Asn Asp Leu Glu Leu Gly Lys
115 120 125
Ala Tyr Ala Ser Leu Cys Asp Val Phe Val Asn Asp Ala Phe Gly Thr
130 135 140
Ala His Arg Ala Gln Ala Ser Thr Glu Ala Val Ala Gln Ala Ala Pro
145 150 155 160
Val Ala Cys Ala Gly Val Leu Met Ala Gly Glu Leu Asp Ala Leu Gly
165 170 175
Lys Ala Leu Lys Gln Pro Ala Arg Pro Met Val Ala Ile Val Ala Gly
180 185 190

Ser Lys Val Ser Thr Lys Leu Thr Ile Leu Glu Ser Leu Ala Asp Lys
 195 200 205
 Val Asp Gln Leu Ile Val Gly Gly Gly Ile Ala Asn Thr Phe Leu Leu
 210 215 220
 Ala Glu Gly Lys Ala Ile Gly Lys Ser Leu Ala Glu His Asp Leu Val
 225 230 235 240
 Glu Glu Ser Lys Lys Ile Met Ala Lys Met Ala Ala Lys Gly Gly Ser
 245 250 255
 Val Pro Leu Pro Thr Asp Val Val Val Ala Lys Ala Phe Ala Ala Asp
 260 265 270
 Ala Glu Ala Val Val Lys Asp Ile Ala Ala Asp Ala Glu Ala Val Val
 275 280 285
 Lys Asp Ile Ala Asp Val Ala Glu Asp Glu Met Ile Leu Asp Ile Gly
 290 295 300
 Pro Lys Ser Ala Ala Ala Leu Ala Asp Leu Leu Lys Ala Ala Gly Thr
 305 310 315 320
 Val Val Trp Asn Gly Pro Val Gly Val Phe Glu Phe Asp Gln Phe Ala
 325 330 335
 Gly Gly Thr Lys Ala Leu Ala Glu Ala Ile Ala Gln Ser Lys Ala Phe
 340 345 350
 Ser Ile Ala Gly Gly Gly Asp Thr Leu Ala Ala Ile Ala Lys Phe Gly
 355 360 365
 Val Thr Glu Gln Ile Gly Tyr Ile Ser Thr Gly Gly Gly Ala Phe Leu
 370 375 380
 Glu Phe Leu Glu Gly Lys Glu Leu Pro Ala Val Ala Ala Leu Glu Lys
 385 390 395 400

Arg Gly Ala

<210> 2
 <211> 170
 <212> PRT
 <213> Neisseria meningitidis

<400> 2
 Met Asn Thr Leu Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile Val
 1 5 10 15
 Ile Ala Ile Val Gly Ile Leu Ala Ala Val Ala Leu Pro Ala Tyr Gln
 20 25 30
 Asp Tyr Thr Ala Arg Ala Gln Val Ser Glu Ala Ile Leu Leu Ala Glu
 35 40 45
 Gly Gln Lys Ser Ala Val Thr Glu Tyr Tyr Leu Asn His Gly Glu Trp
 50 55 60
 Pro Gly Asn Asn Thr Ser Ala Gly Val Ala Thr Ser Ser Glu Ile Lys
 65 70 75 80

Gly Lys Tyr Val Lys₈₅ Ser Val Glu Val Lys₉₀ Asn³ Gly Val Val Thr Ala₉₅
 Gln Met Ala Ser₁₀₀ Ser Asn Val Asn₁₀₅ Glu Ile Lys Gly Lys₁₁₀ Lys Leu
 Ser Leu Trp₁₁₅ Ala Lys Arg Gln₁₂₀ Asn Gly Ser Val Lys Trp₁₂₅ Phe Cys Gly
 Gln Pro Val Thr Arg Asp Lys₁₃₅ Ala Lys Ala Ala Asn₁₄₀ Asp Asp Val Thr
 Ala₁₄₅ Ala Ala Ala Asn₁₅₀ Gly Lys Lys Ile Asp₁₅₅ Thr Lys His Leu Pro₁₆₀
 Ser Thr Cys Arg Asp₁₆₅ Ala Ser Asp Ala Ser₁₇₀

<210> 3
 <211> 685
 <212> PRT
 <213> Neisseria meningitidis

<400> 3
 Met Thr Arg Lys₅ Ile Leu Val Thr Ser Ala₁₀ Leu Pro Tyr Ala Asn Gly₁₅
 Ser Ile His Leu₂₀ Gly His Met Val Glu₂₅ His Ile Gln Thr Asp₃₀ Val Trp
 Val Arg Phe₃₅ Gln Lys Leu Arg Gly₄₀ His Ala Cys His Tyr₄₅ Cys Cys Ala
 Asp Asp₅₀ Thr His Gly Thr Pro₅₅ Val Met Leu Ala Ala₆₀ Gln Lys Gln Gly
 Ile Ala Pro Glu Asp₇₀ Met Ile Ala Lys Val Arg₇₅ Glu Glu His Leu Ala₈₀
 Asp Phe Thr Gly Phe₈₅ Phe Ile Gly Tyr Asp₉₀ Asn Tyr Tyr Ser Thr His₉₅
 Ser Pro Glu Asn₁₀₀ Lys Gln Phe Ser Gln₁₀₅ Asp Ile Tyr Arg Ala₁₁₀ Leu Lys
 Ala Asn Gly₁₁₅ Lys Ile Glu Ser Arg₁₂₀ Val Ile Glu Gln Leu₁₂₅ Phe Asp Pro
 Glu Lys₁₃₀ Gln Met Phe Leu Pro₁₃₅ Asp Arg Phe Val Lys₁₄₀ Gly Glu Cys Pro
 Lys Cys His Ala Gln Asp₁₅₀ Gln Tyr Gly Asp Asn₁₅₅ Cys Glu Val Cys Gly₁₆₀
 Thr Thr Tyr Ser Pro₁₆₅ Thr Glu Leu Ile Asn₁₇₀ Pro Tyr Ser Ala Val Ser₁₇₅
 Gly Thr Lys Pro₁₈₀ Glu Leu Arg Glu Ser₁₈₅ Glu His Phe Phe Phe₁₉₀ Lys Leu
 Gly Glu Cys₁₉₅ Ala Asp Phe Leu Lys₂₀₀ Ala Trp Thr Ser Gly₂₀₅ Asn Asn Pro
 His Asp Gly Lys Pro His Leu Gln Ala Glu Ala Leu Asn Lys Met Lys

210		215		220
Glu Trp Leu Gly Glu Gly Glu Glu Thr Thr Leu Ser Asp Trp Asp Ile				
225		230	235	240
Ser Arg Asp Ala Pro Tyr Phe Gly Phe Glu Ile Pro Asp Ala Pro Gly				
	245		250	255
Lys Tyr Phe Tyr Val Trp Leu Asp Ala Pro Val Gly Tyr Met Ala Ser				
	260		265	270
Phe Lys Asn Leu Cys Asp Arg Ile Gly Val Asp Phe Asp Glu Tyr Phe				
	275		280	285
Lys Ala Asp Ser Gln Thr Glu Met Tyr His Phe Ile Gly Lys Asp Ile				
	290		295	300
Leu Tyr Phe His Ala Leu Phe Trp Pro Ala Met Leu His Phe Ser Gly				
	305		310	315
His Arg Ala Pro Thr Gly Val Tyr Ala His Gly Phe Leu Thr Val Asp				
	325		330	335
Gly Gln Lys Met Ser Lys Ser Arg Gly Thr Phe Ile Thr Ala Lys Ser				
	340		345	350
Tyr Leu Glu Gln Gly Leu Asn Pro Glu Trp Met Arg Tyr Tyr Ile Ala				
	355		360	365
Ala Lys Leu Asn Ser Lys Ile Glu Asp Ile Asp Leu Asn Leu Gln Asp				
	370		375	380
Phe Ile Ser Arg Val Asn Ser Asp Leu Val Gly Lys Tyr Val Asn Ile				
	385		390	395
Ala Ala Arg Ala Ser Gly Phe Ile Ala Lys Arg Phe Glu Gly Arg Leu				
	405		410	415
Lys Asp Val Ala Asp Ser Glu Leu Leu Ala Lys Leu Thr Ala Gln Ser				
	420		425	430
Glu Ala Ile Ala Glu Cys Tyr Glu Ser Arg Glu Tyr Ala Lys Ala Leu				
	435		440	445
Arg Asp Ile Met Ala Leu Ala Asp Ile Val Asn Glu Tyr Val Asp Ala				
	450		455	460
Asn Lys Pro Trp Glu Leu Ala Lys Gln Glu Gly Gln Asp Glu Arg Leu				
	465		470	475
His Glu Val Cys Ser Glu Leu Ile Asn Ala Phe Thr Met Leu Thr Ala				
	485		490	495
Tyr Leu Ala Pro Val Leu Pro Gln Thr Ala Ala Asn Ala Ala Lys Phe				
	500		505	510
Leu Asn Leu Glu Ala Ile Thr Trp Ala Asn Thr Arg Asp Thr Leu Gly				
	515		520	525
Lys His Ala Ile Asn Lys Tyr Glu His Leu Met Gln Arg Val Glu Gln				
	530		535	540
Lys Gln Val Asp Asp Leu Ile Glu Ala Asn Lys Gln Ser Ile Ala Ala				
	545		550	555
				560

Ala Ala Ala Pro Ala Ala Glu Glu Gly Lys Tyr Glu Lys Val Ala Glu
565 570 575

Gln Ala Ser Phe Asp Asp Phe Met Lys Ile Asp Met Arg Val Ala Lys
580 585 590

Val Leu Asn Cys Glu Ala Val Glu Gly Ser Thr Lys Leu Leu Lys Phe
595 600 605

Asp Leu Asp Phe Gly Phe Glu Lys Arg Ile Ile Phe Ser Gly Ile Ala
610 615 620

Ala Ser Tyr Pro Asn Pro Ala Glu Leu Asn Gly Arg Met Val Ile Ala
625 630 635 640

Val Ala Asn Phe Ala Pro Arg Lys Met Ala Lys Phe Gly Val Ser Glu
645 650 655

Gly Met Ile Leu Ser Ala Ala Thr Ala Asp Gly Lys Leu Lys Leu Leu
660 665 670

Asp Val Asp Thr Gly Ala Gln Pro Gly Asp Lys Val Gly
675 680 685

<210> 4

<211> 456

<212> PRT

<213> Neisseria meningitidis

<400> 4

Met Pro Gln Asn Thr Leu Asn Ile Val Ile Leu Ala Ala Gly Lys Gly
1 5 10 15

Thr Arg Met Tyr Ser Lys Met Pro Lys Val Leu His Arg Ile Gly Gly
20 25 30

Lys Pro Met Val Gly Arg Val Ile Asp Thr Ala Ala Ala Leu Asn Pro
35 40 45

Gln Asn Ile Cys Val Val Ile Gly His Gly Lys Glu Gln Val Leu Asp
50 55 60

Thr Val Lys Arg Asp Val Val Trp Val Glu Gln Thr Glu Gln Leu Gly
65 70 75 80

Thr Gly His Ala Val Lys Thr Ala Leu Pro His Leu Ser Ala Glu Gly
85 90 95

Arg Thr Leu Val Leu Tyr Gly Asp Val Pro Leu Ile Asp Val Glu Thr
100 105 110

Leu Glu Thr Leu Leu Glu Ala Ala Gly Asn Glu Val Gly Leu Leu Thr
115 120 125

Asp Val Pro Asn Asp Pro Thr Gly Leu Gly Arg Ile Ile Arg Asp Ser
130 135 140

Asn Gly Ser Val Thr Ala Ile Val Glu Glu Lys Asp Ala Asp Ala Val
145 150 155 160

Gln Lys Ala Val Lys Glu Ile Asn Thr Gly Ile Leu Val Leu Pro Asn
165 170 175

Ala Lys Leu Glu Asn Trp Leu Asn Ser Leu Ser Ser Asn Asn Ala Gln
 180 185 190
 Gly Glu Tyr Tyr Leu Thr Asp Leu Ile Ala Lys Ala Val Ala Asp Gly
 195 200 205
 Ile Lys Val His Pro Val Gln Val Arg Ala Ser His Leu Ala Ala Gly
 210 215 220
 Val Asn Asn Lys Leu Gln Leu Thr Glu Leu Glu Arg Ile Phe Gln Thr
 225 230 235 240
 Glu Gln Ala Gln Glu Leu Leu Lys Ala Gly Val Thr Leu Arg Asp Pro
 245 250 255
 Ala Arg Phe Asp Leu Arg Gly Arg Leu Lys His Gly Gln Asp Val Val
 260 265 270
 Ile Asp Val Asn Cys Ile Phe Glu Gly Asp Ile Glu Leu Gly Asp Asn
 275 280 285
 Val Glu Ile Gly Ala Asn Cys Val Ile Lys Asn Ala Lys Ile Gly Ala
 290 295 300
 Asn Ser Lys Ile Ala Pro Phe Ser His Leu Glu Ser Cys Glu Val Gly
 305 310 315 320
 Glu Asn Asn Arg Ile Gly Pro Tyr Ala Arg Leu Arg Pro Gln Ala Arg
 325 330 335
 Leu Ala Asp Asp Val His Val Gly Asn Phe Val Glu Ile Lys Asn Ala
 340 345 350
 Ala Ile Gly Lys Gly Thr Lys Ala Asn His Leu Thr Tyr Ile Gly Asp
 355 360 365
 Ala Glu Val Gly Cys Lys Thr Asn Phe Gly Ala Gly Thr Ile Ile Ala
 370 375 380
 Asn Tyr Asp Gly Val His Lys His Lys Thr Val Ile Gly Asp Glu Val
 385 390 395 400
 Arg Ile Gly Ser Asn Cys Val Leu Val Ala Pro Val Thr Leu Gly Asn
 405 410 415
 Lys Val Thr Thr Gly Ala Gly Ser Thr Ile Thr Arg Asn Val Glu Asp
 420 425 430
 Asn Lys Leu Ala Leu Ala Arg Ala Arg Gln Thr Val Ile Glu Gly Trp
 435 440 445
 Val Arg Pro Glu Lys Asp Lys Gln
 450 455

<210> 5
 <211> 421
 <212> PRT
 <213> Neisseria meningitidis

<400> 5
 Met Phe Ser Phe Phe Arg Arg Lys Lys Lys Gln Glu Thr Pro Ala Leu
 1 5 10 15

Glu Glu Ala Gln Ile Gln Glu Thr Ala Ala Lys Ala Glu Ser Glu Leu

20					25					30					
Ala	Gln	Ile	Val	Glu	Asn	Ile	Lys	Glu	Asp	Ala	Glu	Ser	Leu	Ala	Glu
	35						40					45			
Ser	Val	Lys	Gly	Gln	Val	Glu	Ser	Ala	Val	Glu	Thr	Val	Ser	Gly	Ala
	50					55					60				
Val	Glu	Gln	Val	Lys	Glu	Thr	Val	Ala	Glu	Met	Leu	Ser	Glu	Ala	Glu
	65					70					75				80
Glu	Ala	Ala	Glu	Lys	Ala	Ala	Glu	Gln	Val	Glu	Ala	Ala	Lys	Glu	Ala
				85					90					95	
Val	Ala	Glu	Thr	Val	Gly	Glu	Ala	Val	Gly	Gln	Val	Gln	Glu	Ala	Val
			100					105					110		
Ala	Thr	Thr	Glu	Glu	His	Lys	Leu	Gly	Trp	Ala	Ala	Arg	Leu	Lys	Gln
		115					120					125			
Gly	Leu	Thr	Lys	Ser	Arg	Asp	Lys	Met	Ala	Lys	Ser	Leu	Ala	Gly	Val
	130					135					140				
Phe	Gly	Gly	Gly	Gln	Ile	Asp	Glu	Asp	Leu	Tyr	Glu	Glu	Leu	Glu	Thr
	145					150					155				160
Val	Leu	Ile	Thr	Ser	Asp	Met	Gly	Met	Glu	Ala	Thr	Glu	Tyr	Leu	Met
				165					170					175	
Lys	Asp	Val	Arg	Asp	Arg	Val	Ser	Leu	Lys	Gly	Leu	Lys	Asp	Gly	Asn
			180					185					190		
Glu	Leu	Arg	Gly	Ala	Leu	Lys	Glu	Ala	Leu	Tyr	Asp	Leu	Ile	Lys	Pro
		195					200					205			
Leu	Glu	Lys	Pro	Leu	Val	Leu	Pro	Glu	Thr	Lys	Glu	Pro	Phe	Val	Ile
	210					215					220				
Met	Leu	Ala	Gly	Ile	Asn	Gly	Ala	Gly	Lys	Thr	Thr	Ser	Ile	Gly	Lys
	225					230					235				240
Leu	Ala	Lys	Tyr	Phe	Gln	Ala	Gln	Gly	Lys	Ser	Val	Leu	Leu	Ala	Ala
				245					250					255	
Gly	Asp	Thr	Phe	Arg	Ala	Ala	Ala	Arg	Glu	Gln	Leu	Gln	Ala	Trp	Gly
			260					265					270		
Glu	Arg	Asn	Asn	Val	Thr	Val	Ile	Ser	Gln	Thr	Thr	Gly	Asp	Ser	Ala
		275					280					285			
Ala	Val	Cys	Phe	Asp	Ala	Val	Gln	Ala	Ala	Lys	Ala	Arg	Gly	Ile	Asp
	290					295					300				
Ile	Val	Leu	Ala	Asp	Thr	Ala	Gly	Arg	Leu	Pro	Thr	Gln	Leu	His	Leu
	305					310					315				320
Met	Glu	Glu	Ile	Lys	Lys	Val	Lys	Arg	Val	Leu	Gln	Lys	Ala	Met	Pro
				325					330					335	
Asp	Ala	Pro	His	Glu	Ile	Ile	Val	Val	Leu	Asp	Ala	Asn	Ile	Gly	Gln
			340					345					350		
Asn	Ala	Val	Asn	Gln	Val	Lys	Ala	Phe	Asp	Asp	Ala	Leu	Gly	Leu	Thr
		355					360					365			

Gly Leu Ile Val Thr Lys Leu Asp Gly Thr Ala Lys Gly Gly Ile Leu
 370 375 380
 Ala Ala Leu Ala Ser Asp Arg Pro Val Pro Val Arg Tyr Ile Gly Val
 385 390 395 400
 Gly Glu Gly Ile Asp Asp Leu Arg Pro Phe Asp Ala Arg Ala Phe Val
 405 410 415
 Asp Ala Leu Leu Asp
 420

<210> 6
 <211> 408
 <212> PRT
 <213> Neisseria meningitidis

<400> 6
 Met Asn Thr Asp Asn Leu His Asp Ile Leu Asp Glu Met Val Gln Val
 1 5 10 15
 Tyr Ser Gln Lys Lys Gln Ser Arg Ser Glu Thr Pro Ala Glu Ile Gly
 20 25 30
 Ala His Phe His Pro Leu Leu Asp Arg Leu Cys Glu Thr Ala Glu Ala
 35 40 45
 Gln Asn Ala Ser Asp Ile Leu Ile Ser Lys Gly Phe Pro Pro Ser Leu
 50 55 60
 Lys Ile Asn Ser Ala Leu Thr Pro Gln Pro Gln Lys Ala Leu Thr Gly
 65 70 75 80
 Glu Glu Thr Ala Ala Ile Ala Ala Ser Thr Met Asn Ala Glu Gln Ser
 85 90 95
 Glu Ile Phe Arg Arg Asp Gly Glu Ile Asn Tyr Ser Val Gln Ser Arg
 100 105 110
 Ser Gly Thr Arg Tyr Arg Ala Asn Ala Tyr His Ser Gln Gly Ser Ala
 115 120 125
 Gly Leu Val Leu Arg Arg Ile Asn His Val Ile Pro Gln Met Gln Glu
 130 135 140
 Leu Gly Leu Pro Glu Lys Leu Lys Asp Leu Ala Val Ala Pro Arg Gly
 145 150 155 160
 Leu Leu Ile Ile Val Gly Pro Thr Gly Ser Gly Lys Ser Thr Thr Met
 165 170 175
 Ala Thr Met Leu Glu His Arg Asn Lys Thr Leu Pro Ser His Ile Val
 180 185 190
 Thr Ile Glu Asp Pro Ile Glu Phe Ile Tyr Lys Pro Arg Arg Cys Ile
 195 200 205
 Phe Thr Gln Arg Glu Ile Gly Val Asp Thr Ile Asn Trp Gln Thr Ala
 210 215 220
 Val Gln Asn Ala Met Arg Gln Ser Pro Asp Val Val Cys Ile Gly Glu
 225 230 235 240

9

Val Arg Ser Arg Glu Ser Met Glu Tyr Ala Met Gln Leu Ala Gln Thr
245 250 255

Gly His Leu Cys Ile Phe Thr Leu His Ala Asn Thr Ala Pro Gln Ser
260 265 270

Leu Glu Arg Ile Leu Asn Phe Tyr Pro Lys Glu Gln His Asn Gln Ile
275 280 285

Leu Ile Asp Ile Ala Leu Asn Leu Thr Gly Ile Ile Cys Gln Arg Leu
290 295 300

Ala Leu Lys Gln Asp Lys Thr Gly Arg Thr Ala Val Val Asp Leu Leu
305 310 315 320

Ile Asn Thr Pro Ala Ile Gln Asp Phe Ile Leu Lys Gly Asp Leu Met
325 330 335

Asn Ile Ser Lys Ile Met Glu Thr Ala Lys Thr Asp Gly Met Gln Thr
340 345 350

Met Asp Gln Asn Leu Phe Glu Leu Tyr Arg His Gly Ile Ile Ser Tyr
355 360 365

Glu Glu Ala Leu Arg Gln Ser Val Ser Ala Asn Asn Leu Arg Leu His
370 375 380

Ile Gln Leu His Lys Glu Gly Lys Thr Pro Glu Leu Leu Tyr Asp Arg
385 390 395 400

Val Asn Gly Leu Asn Leu Ile Ser
405

<210> 7
<211> 347
<212> PRT
<213> Neisseria meningitidis

<400> 7
Met Gln Ile Thr Asp Leu Leu Ala Phe Gly Ala Lys Asn Lys Ala Ser
1 5 10 15

Asp Leu His Leu Ser Ser Gly Ile Ser Pro Met Ile Arg Val His Gly
20 25 30

Asp Met Arg Arg Ile Asn Leu Pro Glu Met Ser Ala Glu Glu Val Gly
35 40 45

Asn Met Val Thr Ser Val Met Asn Asp His Gln Arg Lys Ile Tyr Gln
50 55 60

Gln Asn Leu Glu Val Asp Phe Ser Phe Glu Leu Pro Asn Val Ala Arg
65 70 75 80

Phe Arg Val Asn Ala Phe Asn Ile Gly Arg Gly Pro Ala Ala Val Phe
85 90 95

Arg Thr Ile Pro Ser Thr Val Leu Ser Leu Glu Glu Leu Lys Ala Pro
100 105 110

Ser Ile Phe Gln Lys Ile Ala Glu Ser Pro Arg Gly Met Val Leu Val
115 120 125

Thr Gly Pro Thr Gly Ser Gly Lys Ser Thr Thr Leu Ala Ala Met Ile

Lys Glu Tyr Val Glu Ser Lys Gly Met Ile Phe Ile Ser Thr Pro Phe
 100 105 110
 Ser Arg Ala Ala Ala Leu Arg Leu Gln Arg Met Asp Ile Pro Ala Tyr
 115 120 125
 Lys Ile Gly Ser Gly Glu Cys Asn Asn Tyr Pro Leu Ile Lys Leu Val
 130 135 140
 Ala Ser Phe Gly Lys Pro Ile Ile Leu Ser Thr Gly Met Asn Ser Ile
 145 150 155 160
 Glu Ser Ile Lys Lys Ser Val Glu Ile Ile Arg Glu Ala Gly Val Pro
 165 170 175
 Tyr Ala Leu Leu His Cys Thr Asn Ile Tyr Pro Thr Pro Tyr Glu Asp
 180 185 190
 Val Arg Leu Gly Gly Met Asn Asp Leu Ser Glu Ala Phe Pro Asp Ala
 195 200 205
 Ile Ile Gly Leu Ser Asp His Thr Leu Asp Asn Tyr Ala Cys Leu Gly
 210 215 220
 Ala Val Ala Leu Gly Gly Ser Ile Leu Glu Arg His Phe Thr Asp Arg
 225 230 235 240
 Met Asp Arg Pro Gly Pro Asp Ile Val Cys Ser Met Asn Pro Asp Thr
 245 250 255
 Phe Lys Glu Leu Lys Gln Gly Ala His Ala Leu Lys Leu Ala Arg Gly
 260 265 270
 Gly Lys Lys Asp Thr Ile Ile Ala Gly Glu Lys Pro Thr Lys Asp Phe
 275 280 285
 Ala Phe Ala Ser Val Val Ala Asp Lys Asp Ile Lys Lys Gly Glu Leu
 290 295 300
 Leu Ser Gly Asp Asn Leu Trp Val Lys Arg Pro Gly Asn Gly Asp Phe
 305 310 315 320
 Ser Val Asn Glu Tyr Glu Thr Leu Phe Gly Lys Val Ala Ala Cys Asn
 325 330 335
 Ile Arg Lys Gly Ala Gln Ile Lys Lys Thr Asp Ile Glu
 340 345
 <210> 9
 <211> 490
 <212> PRT
 <213> Neisseria meningitidis
 <400> 9
 Met Asn Gln Thr Ser Arg Asp Leu Thr Arg Ile Ser His Asn Thr Lys
 1 5 10 15
 Ile Val Ala Thr Leu Gly Pro Gly Ser Asn Asn Val Glu Leu Leu Glu
 20 25 30
 Asp Met Ile Arg Val Gly Gly Leu Asn Val Val Arg Phe Asn Phe Ser
 35 40 45

His Gly Thr Pro Glu Phe His Gln Glu Asn Ala¹² Leu Ile Val Arg Glu
 50 55 60
 Ala Ala Lys Arg Ala Gly Gln Glu Ile Ala Ile Ile Ala Asp Leu Gln
 65 70 75 80
 Gly Pro Lys Ile Arg Val Gly Lys Ile Ala Gly Gly Gly Ile Glu Leu
 85 90 95
 Asn Lys Gly Glu Thr Leu Val Leu Asp Ala Ala Leu Glu Gly Glu Gly
 100 105 110
 Thr Arg Glu Ala Val Gly Leu Asp Tyr Arg Asp Leu Pro Asp Asp Val
 115 120 125
 Ala Ala Gly Asp Val Leu Trp Leu Asp Asp Gly Leu Leu Thr Leu Thr
 130 135 140
 Val Glu Ser Val Glu Gly Ser Arg Ile Ile Thr Arg Val Glu Asn Ser
 145 150 155 160
 His Val Leu Lys Ser Asn Lys Gly Ile Asn Lys Arg Gly Gly Gly Leu
 165 170 175
 Ser Ala Gly Ala Leu Thr Glu Lys Asp Phe Arg Asp Leu Lys Thr Ala
 180 185 190
 Ile Ala Ile Gly Cys Asp Tyr Leu Ala Ile Ser Phe Val Lys Ser Ala
 195 200 205
 Glu Asp Leu His Ile Ala Arg Ala Lys Val Glu Glu Glu Met Lys Gly
 210 215 220
 Ser Thr Ala Val Arg Pro Gly Leu Val Ser Lys Ile Glu Arg Val Glu
 225 230 235 240
 Ala Ile Glu Asn Leu Asp Glu Ile Ile Leu Ala Gly Asp Gly Ile Met
 245 250 255
 Val Ala Arg Gly Asp Leu Ala Val Glu Val Gly His Ala Ala Val Pro
 260 265 270
 Ala Leu Gln Lys Arg Met Ile Arg Arg Ala Arg Glu Leu Arg Arg Phe
 275 280 285
 Ser Ile Thr Ala Thr Gln Met Met Glu Ser Met Ile Thr Asn Pro Val
 290 295 300
 Pro Thr Arg Ala Glu Val Ser Asp Val Ala Asn Ala Val Leu Asp Gly
 305 310 315 320
 Thr Asp Ala Val Met Cys Ser Ala Glu Thr Ala Val Gly Ala Tyr Pro
 325 330 335
 Phe Glu Thr Val Ser Gln Met Ala Ile Ile Cys Ala Ala Ala Glu Lys
 340 345 350
 Glu Gln Asp Ser Leu Asn Gly Val Ala Glu Gln Val Glu Tyr Pro Glu
 355 360 365
 Ala Val Ser Thr Asn Leu Ala Val Ala Gly Gly Ala Val Ser Val Ala
 370 375 380
 Arg Ala Val His Ala Lys Ala Ile Val Ala Leu Thr Glu Ser Gly Ser

											13					
385					390					395						400
Thr	Ala	Phe	Glu	Ile 405	Ser	Arg	His	Asn	Ile 410	Thr	Leu	Pro	Ile	Phe 415	Ala	
Leu	Thr	Pro	Ser 420	Val	Ser	Ala	Gln	Arg 425	Arg	Met	Ala	Met	Tyr 430	Arg	Gly	
Val	Arg	Pro 435	Leu	Ile	Leu	Ala	Thr 440	Ser	Thr	Asp	His	Asp 445	Thr	Ala	Leu	
Asn	Glu 450	Val	Glu	Thr	Met	Leu 455	Val	Glu	His	Asn	Ile 460	Leu	His	Ser	Gly	
Asp 465	Gln	Tyr	Ile	Ile	Thr 470	Ser	Gly	Ser	Gln	Met 475	Arg	Glu	Ser	Gly	Ser 480	
Thr	Asn	Thr	Leu	Glu 485	Val	Leu	Arg	Val	Lys 490	.						

Tyr Leu Thr Tyr Arg Ile Asn Lys Asn Ile Thr Asp Pro Asp Thr Gly
 210 215 220
 Lys Phe Leu Gly Gln Glu Val Ala Phe Ser Gly Ile Val Arg Ser Leu
 225 230 235 240
 Asp Tyr Thr Asp Ser Val Leu Glu Gln Arg Ser Lys Gln Ala Gly Glu
 245 250 255
 Arg Pro Lys Asp Asn Glu Tyr His Thr Arg Thr His Pro Leu Ile Thr
 260 265 270
 Pro Leu Arg Thr Pro Ser Ile Gln Pro Leu Val Val Glu Thr Ala Ile
 275 280 285
 Ser Glu Ile Gln Gln Gly Asp Tyr Leu Met Lys Met Pro Glu Asp Thr
 290 295 300
 Asp Arg Phe Asn Met Met Pro His Glu Pro Ser Arg Pro Val Gln Ala
 305 310 315 320
 Lys Ile Val Ser Val Phe Glu Gly Thr Arg Ile Ala Gly Gln Phe Gln
 325 330 335
 Thr Ile Thr Ile Asp Lys Gly Glu Ala Asp Gly Leu Asp Lys Gly Thr
 340 345 350
 Val Leu Ser Leu Tyr Lys Arg Lys Lys Thr Met Gln Val Asp Leu Ser
 355 360 365
 Asn Asn Phe Lys Ser Arg Asp Thr Val Glu Leu Ile Ser Thr Pro Ala
 370 375 380
 Glu Glu Val Gly Leu Ala Met Val Tyr Arg Thr Ser Glu His Leu Ser
 385 390 395 400
 Ser Ala Ile Ile Leu Glu Asn Ile Ser Asp Ile Ser Val Gly Asp Thr
 405 410 415
 Ala Ala Asn Pro Gly Arg Asp Leu Asp Asn Ile Pro Asp Gln Gly Arg
 420 425 430
 Ser Arg Val Lys Phe Gly Phe Asn Arg Ser Glu
 435 440

<210> 11
 <211> 425
 <212> PRT
 <213> Neisseria meningitidis

<400> 11
 Met Arg Ser Ser Asp Ile Leu Ile Val Asp Asp Glu Ile Gly Ile Arg
 1 5 10 15
 Asp Leu Leu Ser Glu Ile Leu Gln Asp Glu Gly Tyr Ser Val Ala Leu
 20 25 30
 Ala Glu Asn Ala Glu Glu Ala Arg Lys Leu Arg His Gln Ala Arg Pro
 35 40 45
 Ala Met Val Leu Leu Asp Ile Trp Met Pro Asp Cys Asp Gly Ile Thr
 50 55 60

Leu Leu Lys Glu Trp Ala Lys Asn Gly Gln Leu Asn Met Pro Val Val
 65 70 75 80
 Met Met Ser Gly His Ala Ser Ile Asp Thr Ala Val Glu Ala Thr Lys
 85 90 95
 Ile Gly Ala Ile Asp Phe Leu Glu Lys Pro Ile Ser Leu Gln Lys Leu
 100 105 110
 Leu Ser Ala Val Glu Asn Ala Leu Lys Tyr Gly Ala Ala Gln Thr Glu
 115 120 125
 Thr Gly Pro Val Phe Asp Lys Leu Gly Asn Ser Ala Ala Ile Gln Glu
 130 135 140
 Met Asn Arg Glu Val Gly Ala Ala Val Lys Cys Ala Ser Pro Val Leu
 145 150 155 160
 Leu Thr Gly Glu Ala Gly Ser Pro Phe Glu Thr Val Ala Arg Tyr Phe
 165 170 175
 His Lys Asn Gly Thr Pro Trp Val Ser Pro Ala Arg Val Glu Tyr Leu
 180 185 190
 Ile Asp Met Pro Met Glu Leu Leu Gln Lys Ala Glu Gly Gly Val Leu
 195 200 205
 Tyr Val Gly Asp Ile Ala Gln Tyr Ser Arg Asn Ile Gln Ala Gly Ile
 210 215 220
 Ala Phe Ile Val Gly Lys Ala Glu His Arg Arg Val Arg Val Val Ala
 225 230 235 240
 Ser Gly Ser Arg Ala Ala Gly Ser Asp Gly Ile Ala Cys Glu Glu Lys
 245 250 255
 Leu Ala Glu Leu Leu Ser Glu Ser Val Val Arg Ile Pro Pro Leu Arg
 260 265 270
 Met Gln His Glu Asp Ile Pro Phe Leu Ile Gln Gly Ile Ala Cys Asn
 275 280 285
 Val Ala Glu Ser Gln Lys Ile Ala Pro Ala Ser Phe Ser Glu Glu Ala
 290 295 300
 Leu Ala Ala Leu Thr Arg Tyr Asp Trp Pro Gly Asn Phe Asp Gln Leu
 305 310 315 320
 Gln Ser Val Val Ala Thr Leu Leu Leu Glu Ala Asp Gly Gln Glu Ile
 325 330 335
 Gly Ala Gly Ala Val Ser Ser Leu Leu Gly Gln Asn Val Pro Ala Glu
 340 345 350
 Gly Ala Glu Asp Met Val Gly Gly Phe Asn Phe Asn Leu Pro Leu Arg
 355 360 365
 Glu Leu Arg Glu Glu Val Glu Arg Arg Tyr Phe Glu Tyr His Ile Ala
 370 375 380
 Gln Glu Gly Gln Asn Met Ser Gln Val Ala Gln Lys Val Gly Leu Glu
 385 390 395 400
 Arg Thr His Leu Tyr Arg Lys Leu Lys Gln Leu Gly Ile Gly Val Ser

16

405 410 415

Arg Arg Ala Gly Glu Lys Thr Glu Glu
 420 425

<210> 12
 <211> 394
 <212> PRT
 <213> Neisseria meningitidis

<400> 12
 Met Ala Lys Glu Lys Phe Glu Arg Ser Lys Pro His Val Asn Val Gly
 1 5 10 15

Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Leu
 20 25 30

Thr Thr Ile Leu Ala Lys Lys Phe Gly Gly Ala Ala Lys Ala Tyr Asp
 35 40 45

Gln Ile Asp Asn Ala Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60

Thr Ser His Val Glu Tyr Glu Thr Glu Thr Arg His Tyr Ala His Val
 65 70 75 80

Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95

Ala Gln Met Asp Gly Ala Ile Leu Val Cys Ser Ala Ala Asp Gly Pro
 100 105 110

Met Pro Gln Thr Arg Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125

Pro Tyr Ile Ile Val Phe Met Asn Lys Cys Asp Met Val Asp Asp Ala
 130 135 140

Glu Leu Leu Glu Leu Val Glu Met Glu Ile Arg Asp Leu Leu Ser Ser
 145 150 155 160

Tyr Asp Phe Pro Gly Asp Asp Cys Pro Ile Val Gln Gly Ser Ala Leu
 165 170 175

Lys Ala Leu Glu Gly Asp Ala Ala Tyr Glu Glu Lys Ile Phe Glu Leu
 180 185 190

Ala Ala Ala Leu Asp Ser Tyr Ile Pro Thr Pro Glu Arg Ala Val Asp
 195 200 205

Lys Pro Phe Leu Leu Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
 210 215 220

Gly Thr Val Val Thr Gly Arg Val Glu Arg Gly Ile Ile His Val Gly
 225 230 235 240

Asp Glu Ile Glu Ile Val Gly Leu Lys Glu Thr Gln Lys Thr Thr Cys
 245 250 255

Thr Gly Val Glu Met Phe Arg Lys Leu Leu Asp Glu Gly Gln Ala Gly
 260 265 270

Asp Asn Val Gly Val Leu Leu Arg Gly Thr Lys Arg Glu Asp Val Glu
 275 280 285

Arg Gly Gln Val Leu Ala Lys Pro Gly Thr Ile Thr Pro His Thr Lys
 290 295 300
 Phe Lys Ala Glu Val Tyr Val Leu Ser Lys Glu Glu Gly Gly Arg His
 305 310 315 320
 Thr Pro Phe Phe Ala Asn Tyr Arg Pro Gln Phe Tyr Phe Arg Thr Thr
 325 330 335
 Asp Val Thr Gly Ala Val Thr Leu Glu Glu Gly Val Glu Met Val Met
 340 345 350
 Pro Gly Glu Asn Val Thr Ile Thr Val Glu Leu Ile Ala Pro Ile Ala
 355 360 365
 Met Glu Glu Gly Leu Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Val
 370 375 380
 Gly Ala Gly Val Val Ser Ser Val Ile Ala
 385 390

<210> 13
 <211> 178
 <212> PRT
 <213> Neisseria meningitidis

<400> 13
 Met Ser Lys Lys Trp Tyr Val Val Gln Ala Tyr Ser Gly Phe Glu Lys
 1 5 10 15
 Asn Val Gln Arg Ile Leu Glu Glu Arg Ile Ala Arg Glu Glu Met Gly
 20 25 30
 Asp Tyr Phe Gly Gln Ile Leu Val Pro Val Glu Lys Val Val Asp Ile
 35 40 45
 Arg Asn Gly Arg Lys Thr Ile Ser Glu Arg Lys Ser Tyr Pro Gly Tyr
 50 55 60
 Val Leu Val Glu Met Glu Met Thr Asp Asp Ser Trp His Leu Val Lys
 65 70 75 80
 Ser Thr Pro Arg Val Ser Gly Phe Ile Gly Gly Arg Ala Asn Arg Pro
 85 90 95
 Thr Pro Ile Ser Gln Arg Glu Ala Glu Ile Ile Leu Gln Gln Val Gln
 100 105 110
 Thr Gly Ile Glu Lys Pro Lys Pro Lys Val Glu Phe Glu Val Gly Gln
 115 120 125
 Gln Val Arg Val Asn Glu Gly Pro Phe Ala Asp Phe Asn Gly Val Val
 130 135 140
 Glu Glu Val Asn Tyr Glu Arg Asn Lys Leu Arg Val Ser Val Gln Ile
 145 150 155 160
 Phe Gly Arg Glu Thr Pro Val Glu Leu Glu Phe Ser Gln Val Glu Lys
 165 170 175

Ile Asn

<210> 14
 <211> 231
 <212> PRT
 <213> Neisseria meningitidis

<400> 14
 Met Ala Lys Val Ser Lys Arg Leu Lys Ala Leu Arg Ser Ser Val Glu
 1 5 10 15
 Ala Asn Lys Leu Tyr Ala Ile Asp Glu Ala Ile Ala Leu Val Lys Lys
 20 25 30
 Ala Ala Thr Ala Lys Phe Asp Glu Ser Val Asp Val Ser Phe Asn Leu
 35 40 45
 Gly Val Asp Pro Arg Lys Ser Asp Gln Val Ile Arg Gly Ser Val Val
 50 55 60
 Leu Pro Lys Gly Thr Gly Lys Ile Thr Arg Val Ala Val Phe Thr Gln
 65 70 75 80
 Gly Ala Asn Ala Glu Ala Ala Lys Glu Ala Gly Ala Asp Ile Val Gly
 85 90 95
 Phe Glu Asp Leu Ala Ala Glu Ile Lys Ala Gly Asn Leu Asn Phe Asp
 100 105 110
 Val Val Ile Ala Ser Pro Asp Ala Met Arg Ile Val Gly Gln Leu Gly
 115 120 125
 Thr Ile Leu Gly Pro Arg Gly Leu Met Pro Asn Pro Lys Val Gly Thr
 130 135 140
 Val Thr Pro Asn Val Ala Glu Ala Val Lys Asn Ala Lys Ala Gly Gln
 145 150 155 160
 Val Gln Tyr Arg Thr Asp Lys Ala Gly Ile Val His Ala Thr Ile Gly
 165 170 175
 Arg Ala Ser Phe Ala Glu Ala Asp Leu Lys Glu Asn Phe Asp Ala Leu
 180 185 190
 Leu Asp Ala Ile Val Lys Ala Lys Pro Ala Ala Ala Lys Gly Gln Tyr
 195 200 205
 Leu Lys Lys Val Ala Val Ser Ser Thr Met Gly Leu Gly Ile Arg Val
 210 215 220
 Asp Thr Ser Ser Val Asn Asn
 225 230

<210> 15
 <211> 166
 <212> PRT
 <213> Neisseria meningitidis

<400> 15
 Met Ser Leu Asn Ile Glu Thr Lys Lys Val Ala Val Glu Glu Ile Ser
 1 5 10 15
 Ala Ala Ile Ala Asn Ala Gln Thr Leu Val Val Ala Glu Tyr Arg Gly
 20 25 30
 Ile Ser Val Ser Ser Met Thr Glu Leu Arg Ala Asn Ala Arg Lys Glu

Phe Ala Lys Arg Glu Asn Val Leu Glu Val Pro Phe Leu Leu Ala Thr
 20 25 30
 Gln Ile Asp Ser Tyr Ala Lys Phe Leu Gln Leu Glu Asn Ala Phe Asp
 35 40 45
 Lys Arg Thr Asp Asp Gly Leu Gln Ala Ala Phe Asn Ser Ile Phe Pro
 50 55 60
 Ile Val Ser His Asn Gly Tyr Ala Arg Leu Glu Phe Val His Tyr Thr
 65 70 75 80
 Leu Gly Glu Pro Leu Phe Asp Ile Pro Glu Cys Gln Leu Arg Gly Ile
 85 90 95
 Thr Tyr Ala Ala Pro Leu Arg Ala Arg Ile Arg Leu Val Ile Leu Asp
 100 105 110
 Lys Glu Ala Ser Lys Pro Thr Val Lys Glu Val Arg Glu Asn Glu Val
 115 120 125
 Tyr Met Gly Glu Ile Pro Leu Met Thr Pro Ser Gly Ser Phe Val Ile
 130 135 140
 Asn Gly Thr Glu Arg Val Ile Val Ser Gln Leu His Arg Ser Pro Gly
 145 150 155 160
 Val Phe Phe Glu His Asp Lys Gly Lys Thr His Ser Ser Gly Lys Leu
 165 170 175
 Leu Phe Ser Ala Arg Ile Ile Pro Tyr Arg Gly Ser Trp Leu Asp Phe
 180 185 190
 Glu Phe Asp Pro Lys Asp Leu Leu Tyr Phe Arg Ile Asp Arg Arg Arg
 195 200 205
 Lys Met Pro Val Thr Ile Leu Leu Lys Ala Leu Gly Tyr Asn Asn Glu
 210 215 220
 Gln Ile Leu Asp Ile Phe Tyr Asp Lys Glu Thr Phe Tyr Leu Ser Ser
 225 230 235 240
 Asn Gly Val Gln Thr Asp Leu Val Ala Asp Arg Leu Lys Gly Glu Thr
 245 250 255
 Ala Lys Val Asp Ile Leu Asp Lys Glu Gly Asn Val Leu Val Ala Lys
 260 265 270
 Gly Lys Arg Ile Thr Ala Lys Asn Ile Arg Asp Ile Thr Asn Ala Gly
 275 280 285
 Leu Thr Arg Leu Asp Val Glu Pro Glu Ser Leu Leu Gly Lys Ala Leu
 290 295 300
 Ala Ala Asp Leu Ile Asp Ser Glu Thr Gly Glu Val Leu Ala Ser Ala
 305 310 315 320
 Asn Asp Glu Ile Thr Glu Glu Leu Leu Ala Lys Phe Asp Ile Asn Gly
 325 330 335
 Val Lys Glu Ile Thr Thr Leu Tyr Ile Asn Glu Leu Asp Gln Gly Ala
 340 345 350

Tyr Ile Ser Asn Thr Leu Arg Thr Asp Glu Thr Ala Gly Arg Gln Ala
 355 360 365
 Ala Arg Val Ala Ile Tyr Arg Met Met Arg Pro Gly Glu Pro Pro Thr
 370 375 380
 Glu Glu Ala Val Glu Gln Leu Phe Asn Arg Leu Phe Phe Ser Glu Asp
 385 390 395 400
 Ser Tyr Asp Leu Ser Arg Val Gly Arg Met Lys Phe Asn Thr Arg Thr
 405 410 415
 Tyr Glu Gln Lys Leu Ser Glu Ala Gln Gln Asn Ser Trp Tyr Gly Arg
 420 425 430
 Leu Leu Asn Glu Thr Phe Ala Gly Ala Ala Asp Lys Gly Gly Tyr Val
 435 440 445
 Leu Ser Val Glu Asp Ile Val Ala Ser Ile Ala Thr Leu Val Glu Leu
 450 455 460
 Arg Asn Gly His Gly Glu Val Asp Asp Ile Asp His Leu Gly Asn Arg
 465 470 475 480
 Arg Val Arg Ser Val Gly Glu Leu Thr Glu Asn Gln Phe Arg Ser Gly
 485 490 495
 Leu Ala Arg Val Glu Arg Ala Val Lys Glu Arg Leu Asn Gln Ala Glu
 500 505 510
 Ser Glu Asn Leu Met Pro His Asp Leu Ile Asn Ala Lys Pro Val Ser
 515 520 525
 Ala Ala Ile Lys Glu Phe Phe Gly Ser Ser Gln Leu Ser Gln Phe Met
 530 535 540
 Asp Gln Thr Asn Pro Leu Ser Glu Val Thr His Lys Arg Arg Val Ser
 545 550 555 560
 Ala Leu Gly Pro Gly Gly Leu Thr Arg Glu Arg Ala Gly Phe Glu Val
 565 570 575
 Arg Asp Val His Pro Thr His Tyr Gly Arg Val Cys Pro Ile Glu Thr
 580 585 590
 Pro Glu Gly Pro Asn Ile Gly Leu Ile Asn Ser Leu Ser Val Tyr Ala
 595 600 605
 Arg Thr Asn Asp Tyr Gly Phe Leu Glu Thr Pro Tyr Arg Arg Val Ile
 610 615 620
 Asp Gly Lys Val Thr Glu Glu Ile Asp Tyr Leu Ser Ala Ile Glu Glu
 625 630 635 640
 Gly Arg Tyr Val Ile Ala Gln Ala Asn Ala Asp Leu Asp Ser Asp Gly
 645 650 655
 Asn Leu Ile Gly Asp Leu Val Thr Cys Arg Glu Lys Gly Glu Thr Ile
 660 665 670
 Met Ala Thr Pro Asp Arg Val Gln Tyr Met Asp Val Ala Thr Gly Gln
 675 680 685
 Val Val Ser Val Ala Ala Ser Leu Ile Pro Phe Leu Glu His Asp Asp

										22					
690					695					700					
Ala	Asn	Arg	Ala	Leu	Met	Gly	Ala	Asn	Met	Gln	Arg	Gln	Ala	Val	Pro
705					710					715					720
Cys	Leu	Arg	Pro	Glu	Lys	Pro	Met	Val	Gly	Thr	Gly	Ile	Glu	Arg	Ser
				725					730					735	
Val	Ala	Val	Asp	Ser	Ala	Thr	Ala	Ile	Val	Ala	Arg	Arg	Gly	Gly	Val
			740					745					750		
Val	Glu	Tyr	Val	Asp	Ala	Asn	Arg	Val	Val	Ile	Arg	Val	His	Asp	Asp
		755					760					765			
Glu	Ala	Thr	Ala	Gly	Glu	Val	Gly	Val	Asp	Ile	Tyr	Asn	Leu	Val	Lys
	770					775					780				
Phe	Thr	Arg	Ser	Asn	Gln	Ser	Thr	Asn	Ile	Asn	Gln	Arg	Pro	Ala	Val
785					790					795					800
Lys	Ala	Gly	Asp	Val	Leu	Gln	Arg	Gly	Asp	Leu	Val	Ala	Asp	Gly	Ala
			805						810					815	
Ser	Thr	Asp	Phe	Gly	Glu	Leu	Ala	Leu	Gly	Gln	Asn	Met	Thr	Ile	Ala
			820					825					830		
Phe	Met	Pro	Trp	Asn	Gly	Tyr	Asn	Tyr	Glu	Asp	Ser	Ile	Leu	Ile	Ser
		835					840					845			
Glu	Lys	Val	Ala	Ala	Asp	Asp	Arg	Tyr	Thr	Ser	Ile	His	Ile	Glu	Glu
	850					855					860				
Leu	Asn	Val	Val	Ala	Arg	Asp	Thr	Lys	Leu	Gly	Ala	Glu	Asp	Ile	Thr
865					870					875					880
Arg	Asp	Ile	Pro	Asn	Leu	Ser	Glu	Arg	Met	Gln	Asn	Arg	Leu	Asp	Glu
				885					890					895	
Ser	Gly	Ile	Val	Tyr	Ile	Gly	Ala	Glu	Val	Glu	Ala	Gly	Asp	Val	Leu
			900					905					910		
Val	Gly	Lys	Val	Thr	Pro	Lys	Gly	Glu	Thr	Gln	Leu	Thr	Pro	Glu	Glu
		915					920					925			
Lys	Leu	Leu	Arg	Ala	Ile	Phe	Gly	Glu	Lys	Ala	Ser	Asp	Val	Lys	Asp
	930					935					940				
Thr	Ser	Leu	Arg	Met	Pro	Thr	Gly	Met	Ser	Gly	Thr	Val	Ile	Asp	Val
945					950					955					960
Gln	Val	Phe	Thr	Arg	Glu	Gly	Ile	Gln	Arg	Asp	Lys	Arg	Ala	Gln	Ser
				965				970						975	
Ile	Ile	Asp	Ser	Glu	Leu	Lys	Arg	Tyr	Arg	Leu	Asp	Leu	Asn	Asp	Gln
			980					985					990		
Leu	Arg	Ile	Phe	Asp	Asn	Asp	Ala	Phe	Asp	Arg	Ile	Glu	Arg	Met	Ile
		995					1000					1005			
Val	Gly	Gln	Lys	Ala	Asn	Gly	Gly	Pro	Met	Lys	Leu	Ala	Lys	Gly	Ser
	1010					1015					1020				
Glu	Ile	Thr	Thr	Glu	Tyr	Leu	Ala	Gly	Leu	Pro	Ser	Arg	His	Asp	Trp
1025					1030					1035					1040

Phe Asp Ile Arg Leu Thr Asp Glu Asp Leu Ala Lys Gln Leu Glu Leu
 1045 1050 1055
 Ile Lys Val Ser Leu Gln Gln Lys Arg Glu Glu Ala Asp Glu Leu Tyr
 1060 1065 1070
 Glu Ile Lys Lys Lys Lys Leu Thr Gln Gly Asp Glu Leu Gln Pro Gly
 1075 1080 1085
 Val Gln Lys Met Val Lys Val Phe Ile Ala Ile Lys Arg Arg Leu Gln
 1090 1095 1100
 Ala Gly Asp Lys Met Ala Gly Arg His Gly Asn Lys Gly Val Val Ser
 1105 1110 1115 1120
 Arg Ile Leu Pro Val Glu Asp Met Pro Tyr Met Ala Asp Gly Arg Pro
 1125 1130 1135
 Val Asp Ile Val Leu Asn Pro Leu Gly Val Pro Ser Arg Met Asn Ile
 1140 1145 1150
 Gly Gln Ile Leu Glu Val His Leu Gly Trp Ala Ala Lys Gly Ile Gly
 1155 1160 1165
 Glu Arg Ile Asp Arg Met Leu Lys Glu Gln Arg Lys Ala Gly Glu Leu
 1170 1175 1180
 Arg Glu Phe Leu Asn Arg Leu Tyr Asn Gly Ser Gly Lys Lys Glu Asp
 1185 1190 1195 1200
 Leu Asp Ala Leu Thr Asp Glu Glu Ile Ile Glu Leu Ala Ser Asn Leu
 1205 1210 1215
 Arg Lys Gly Ala Ser Phe Ala Ser Pro Val Phe Asp Gly Ala Lys Glu
 1220 1225 1230
 Ser Glu Ile Arg Glu Met Leu Asn Leu Ala Tyr Pro Ser Asp Asp Pro
 1235 1240 1245
 Glu Val Glu Lys Leu Gly Phe Asn Asp Ser Lys Thr Gln Ile Thr Leu
 1250 1255 1260
 Tyr Asp Gly Arg Ser Gly Glu Ala Phe Asp Arg Lys Val Thr Val Gly
 1265 1270 1275 1280
 Val Met His Tyr Leu Lys Leu His His Leu Val Asp Glu Lys Met His
 1285 1290 1295
 Ala Arg Ser Thr Gly Pro Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly
 1300 1305 1310
 Gly Lys Ala Gln Phe Gly Gly Gln Arg Phe Gly Glu Met Glu Val Trp
 1315 1320 1325
 Ala Leu Glu Ala Tyr Gly Ala Ala Tyr Thr Leu Gln Glu Met Leu Thr
 1330 1335 1340
 Val Lys Ser Asp Asp Val Asn Gly Arg Thr Lys Met Tyr Glu Asn Ile
 1345 1350 1355 1360
 Val Lys Gly Glu His Lys Ile Asp Ala Gly Met Pro Glu Ser Phe Asn
 1365 1370 1375

Val Leu Val Lys Glu Ile Arg Ser Leu Gly Leu Asp Ile Asp Leu Glu
1380 1385 24 1390

Arg Tyr

<210> 18
<211> 1391
<212> PRT
<213> Neisseria meningitidis

<400> 18
Met Asn Leu Leu Asn Leu Phe Asn Pro Leu Gln Thr Ala Gly Met Glu
1 5 10 15

Glu Glu Phe Asp Ala Ile Lys Ile Gly Ile Ala Ser Pro Glu Thr Ile
20 25 30

Arg Ser Trp Ser Tyr Gly Glu Val Lys Lys Pro Glu Thr Ile Asn Tyr
35 40 45

Arg Thr Phe Lys Pro Glu Arg Asp Gly Leu Phe Cys Ala Lys Ile Phe
50 55 60

Gly Pro Val Lys Asp Tyr Glu Cys Leu Cys Gly Lys Tyr Lys Arg Leu
65 70 75 80

Lys Phe Lys Gly Val Thr Cys Glu Lys Cys Gly Val Glu Val Thr Leu
85 90 95

Ser Lys Val Arg Arg Glu Arg Met Gly His Ile Glu Leu Ala Ala Pro
100 105 110

Val Ala His Ile Trp Phe Leu Lys Ser Leu Pro Ser Arg Leu Gly Met
115 120 125

Val Leu Asp Met Thr Leu Arg Asp Ile Glu Arg Val Leu Tyr Phe Glu
130 135 140

Ala Phe Val Val Thr Asp Pro Gly Met Thr Pro Leu Gln Arg Arg Gln
145 150 155 160

Leu Leu Thr Glu Asp Asp Tyr Tyr Asn Lys Leu Asp Glu Tyr Gly Asp
165 170 175

Asp Phe Asp Ala Lys Met Gly Ala Glu Gly Ile Arg Glu Leu Leu Arg
180 185 190

Thr Leu Asn Val Ala Gly Glu Ile Glu Ile Leu Arg Gln Glu Leu Glu
195 200 205

Ser Thr Gly Ser Asp Thr Lys Ile Lys Lys Ile Ala Lys Arg Leu Lys
210 215 220

Val Leu Glu Ala Phe His Arg Ser Gly Met Lys Leu Glu Trp Met Ile
225 230 235 240

Met Asp Val Leu Pro Val Leu Pro Pro Asp Leu Arg Pro Leu Val Pro
245 250 255

Leu Asp Gly Gly Arg Phe Ala Thr Ser Asp Leu Asn Asp Leu Tyr Arg
260 265 270

Arg Val Ile Asn Arg Asn Asn Arg Leu Lys Arg Leu Leu Glu Leu His

275					280					285					
Ala	Pro	Asp	Ile	Ile	Val	Arg	Asn	Glu	Lys	Arg	Met	Leu	Gln	Glu	Ala
	290					295					300				
Val	Asp	Ser	Leu	Leu	Asp	Asn	Gly	Arg	Arg	Gly	Lys	Ala	Met	Thr	Gly
305					310					315					320
Ala	Asn	Lys	Arg	Pro	Leu	Lys	Ser	Leu	Ala	Asp	Met	Ile	Lys	Gly	Lys
				325					330					335	
Gly	Gly	Arg	Phe	Arg	Gln	Asn	Leu	Leu	Gly	Lys	Arg	Val	Asp	Tyr	Ser
			340					345					350		
Gly	Arg	Ser	Val	Ile	Thr	Val	Gly	Pro	Tyr	Leu	Arg	Leu	His	Gln	Cys
		355					360					365			
Gly	Leu	Pro	Lys	Lys	Met	Ala	Leu	Glu	Leu	Phe	Lys	Pro	Phe	Ile	Phe
	370					375					380				
His	Lys	Leu	Glu	Lys	Gln	Gly	Leu	Ala	Ser	Thr	Val	Lys	Ala	Ala	Lys
385					390					395					400
Lys	Leu	Val	Glu	Gln	Glu	Val	Pro	Glu	Val	Trp	Asp	Ile	Leu	Glu	Glu
				405					410					415	
Val	Ile	Arg	Glu	His	Pro	Ile	Met	Leu	Asn	Arg	Ala	Pro	Thr	Leu	His
			420					425					430		
Arg	Leu	Gly	Ile	Gln	Ala	Phe	Glu	Pro	Ile	Leu	Ile	Glu	Gly	Lys	Ala
		435					440					445			
Ile	Gln	Leu	His	Pro	Leu	Val	Cys	Ala	Ala	Phe	Asn	Ala	Asp	Phe	Asp
	450					455					460				
Gly	Asp	Gln	Met	Ala	Val	His	Val	Pro	Leu	Ser	Leu	Glu	Ala	Gln	Met
465					470					475					480
Glu	Ala	Arg	Thr	Leu	Met	Leu	Ala	Ser	Asn	Asn	Val	Leu	Ser	Pro	Ala
				485					490					495	
Asn	Gly	Glu	Pro	Ile	Ile	Val	Pro	Ser	Gln	Asp	Ile	Val	Leu	Gly	Leu
			500					505					510		
Tyr	Tyr	Met	Thr	Arg	Asp	Arg	Ile	Asn	Ala	Lys	Gly	Glu	Gly	Ser	Leu
		515					520					525			
Phe	Ala	Asp	Val	Lys	Glu	Val	His	Arg	Ala	Tyr	His	Thr	Lys	Gln	Val
	530					535					540				
Glu	Leu	Gly	Thr	Lys	Ile	Thr	Val	Arg	Leu	Arg	Glu	Trp	Val	Lys	Asn
545					550					555					560
Glu	Ala	Gly	Glu	Phe	Glu	Pro	Val	Val	Asn	Arg	Tyr	Glu	Thr	Thr	Val
				565					570					575	
Gly	Arg	Ala	Leu	Leu	Ser	Glu	Ile	Leu	Pro	Lys	Gly	Leu	Pro	Phe	Glu
			580					585					590		
Tyr	Val	Asn	Lys	Ala	Leu	Lys	Lys	Lys	Glu	Ile	Ser	Lys	Leu	Ile	Asn
		595				600						605			
Ala	Ser	Phe	Arg	Leu	Cys	Gly	Leu	Arg	Asp	Thr	Val	Ile	Phe	Ala	Asp
	610					615					620				

His 625 Leu Met Tyr Thr Gly 630 Phe Gly Phe Ala Ala 635 Lys Gly Gly Ile Ser 640
 Ile Ala Val Asp 645 Asp Met Glu Ile Pro Lys 650 Glu Lys Ala Ala Leu 655
 Ala Glu Ala Asn 660 Ala Glu Val Lys Glu 665 Ile Glu Asp Gln Tyr Arg Gln 670
 Gly Leu Val 675 Thr Asn Gly Glu Arg 680 Tyr Asn Lys Val Val 685 Asp Ile Trp
 Gly Arg 690 Ala Gly Asp Lys Ile 695 Ala Lys Ala Met Met 700 Asp Asn Leu Ser
 Lys 705 Gln Lys Val Ile Asp 710 Arg Ala Gly Asn Glu 715 Val Asp Gln Glu Ser 720
 Phe Asn Ser Ile Tyr 725 Met Met Ala Asp Ser 730 Gly Ala Arg Gly Ser 735 Ala
 Ala Gln Ile Lys 740 Gln Leu Ser Gly Met 745 Arg Gly Leu Met Ala 750 Lys Pro
 Asp Gly Ser 755 Ile Ile Glu Thr Pro 760 Ile Thr Ser Asn Phe 765 Arg Glu Gly
 Leu Thr 770 Val Leu Gln Tyr Phe 775 Ile Ala Thr His Gly 780 Ala Arg Lys Gly
 Leu 785 Ala Asp Thr Ala Leu 790 Lys Thr Ala Asn Ser 795 Gly Tyr Leu Thr Arg 800
 Arg Leu Val Asp 805 Val Thr Gln Asp Leu 810 Val Val Val Glu Asp Asp 815 Cys
 Gly Thr Ser Asp 820 Gly Phe Val Met Lys 825 Ala Val Val Gln Gly 830 Gly Asp
 Val Ile Glu 835 Ala Leu Arg Asp Arg 840 Ile Leu Gly Arg Val 845 Thr Ala Ser
 Asp Val 850 Val Asp Pro Ser Ser 855 Gly Glu Thr Leu Val 860 Glu Ala Gly Thr
 Leu 865 Leu Thr Glu Lys Leu 870 Val Asp Met Ile Asp 875 Gln Ser Gly Val Asp 880
 Glu Val Lys Val Arg 885 Thr Pro Ile Thr Cys 890 Lys Thr Arg His Gly 895 Leu
 Cys Ala His Cys 900 Tyr Gly Arg Asp Leu 905 Ala Arg Gly Lys Leu 910 Val Asn
 Ala Gly Glu 915 Ala Val Gly Val Ile 920 Ala Ala Gln Ser Ile 925 Gly Glu Pro
 Gly Thr 930 Gln Leu Thr Met Arg 935 Thr Phe His Ile Gly 940 Gly Ala Ala Ser
 Arg 945 Ala Ala Ala Ala Ser 950 Gln Val Glu Ala Lys 955 Ser Asn Gly Thr Ala 960

Arg Phe Ser Ser Gln Met Arg Tyr Val Ala Asn Asn Lys Gly Glu Leu
 965 970 975
 val val ile Gly Arg Ser Cys Glu Val Val Ile His Asp Asp Ile Gly
 980 985 990
 Arg Glu Arg Glu Arg His Lys Val Pro Tyr Gly Ala Ile Leu Leu Val
 995 1000 1005
 Gln Asp Gly Met Ala Ile Lys Ala Gly Gln Thr Leu Ala Thr Trp Asp
 1010 1015 1020
 Pro His Thr Arg Pro Met Ile Thr Glu His Ala Gly Met Val Lys Phe
 1025 1030 1035 1040
 Glu Asn Val Glu Glu Gly Val Thr Val Ala Lys Gln Thr Asp Asp Val
 1045 1050 1055
 Thr Gly Leu Ser Thr Leu Val Val Ile Asp Gly Lys Arg Arg Ser Ser
 1060 1065 1070
 Ser Ala Ser Lys Leu Leu Arg Pro Thr Val Lys Leu Leu Asp Glu Asn
 1075 1080 1085
 Gly Val Glu Ile Cys Ile Pro Gly Thr Ser Thr Pro Val Ser Met Ala
 1090 1095 1100
 Phe Pro Val Gly Ala Val Ile Thr Val Arg Glu Gly Gln Glu Ile Gly
 1105 1110 1115 1120
 Lys Gly Asp Val Leu Ala Arg Ile Pro Gln Ala Ser Ser Lys Thr Arg
 1125 1130 1135
 Asp Ile Thr Gly Gly Leu Pro Arg Val Ala Glu Leu Phe Glu Ala Arg
 1140 1145 1150
 Val Pro Lys Asp Ala Gly Met Leu Ala Glu Ile Thr Gly Thr Val Ser
 1155 1160 1165
 Phe Gly Lys Glu Thr Lys Gly Lys Gln Arg Leu Ile Val Thr Asp Val
 1170 1175 1180
 Asp Gly Val Ala Tyr Glu Thr Leu Ile Ser Lys Glu Lys Gln Ile Leu
 1185 1190 1195 1200
 Val His Asp Gly Gln Val Val Asn Arg Gly Glu Thr Ile Val Asp Gly
 1205 1210 1215
 Ala Val Asp Pro His Asp Ile Leu Arg Leu Gln Gly Ile Glu Ala Leu
 1220 1225 1230
 Ala Arg Tyr Ile Val Gln Glu Val Gln Glu Val Tyr Arg Leu Gln Gly
 1235 1240 1245
 Val Lys Ile Ser Asp Lys His Ile Glu Val Ile Ile Arg Gln Met Leu
 1250 1255 1260
 Arg Arg Val Asn Ile Ala Asp Ala Gly Glu Thr Gly Phe Ile Thr Gly
 1265 1270 1275 1280
 Glu Gln Val Glu Arg Gly Asp Val Met Ala Ala Asn Glu Lys Ala Leu
 1285 1290 1295
 Glu Glu Gly Lys Glu Pro Ala Arg Tyr Glu Asn Val Leu Leu Gly Ile

1300 1305 1310
 Thr Lys Ala Ser Leu Ser Thr Asp Ser Phe Ile Ser Ala Ala Ser Phe
 1315 1320 1325
 Gln Glu Thr Thr Arg Val Leu Thr Glu Ala Ala Ile Met Gly Lys Gln
 1330 1335 1340
 Asp Glu Leu Arg Gly Leu Lys Glu Asn Val Ile Val Gly Arg Leu Ile
 1345 1350 1355 1360
 Pro Ala Gly Thr Gly Leu Thr Tyr His Arg Ser Arg His Gln Gln Trp
 1365 1370 1375
 Gln Glu Val Glu Gln Glu Thr Ala Glu Thr Gln Val Thr Asp Glu
 1380 1385 1390

<210> 19
 <211> 156
 <212> PRT
 <213> Neisseria meningitidis

<400> 19
 Met Pro Arg Arg Arg Glu Val Pro Lys Arg Asp Val Leu Pro Asp Pro
 1 5 10 15
 Lys Phe Gly Ser Val Glu Leu Thr Lys Phe Met Asn Val Leu Met Ile
 20 25 30
 Asp Gly Lys Lys Ser Val Ala Glu Arg Ile Val Tyr Gly Ala Leu Glu
 35 40 45
 Gln Ile Glu Lys Lys Thr Gly Lys Val Ala Ile Glu Val Phe Asn Glu
 50 55 60
 Ala Ile Ala Asn Ala Lys Pro Ile Val Glu Val Lys Ser Arg Arg Val
 65 70 75 80
 Gly Gly Ala Asn Tyr Gln Val Pro Val Glu Val Arg Pro Ser Arg Arg
 85 90 95
 Leu Ala Leu Ala Met Arg Trp Val Arg Asp Ala Ala Arg Lys Arg Gly
 100 105 110
 Glu Lys Ser Met Asp Leu Arg Leu Ala Gly Glu Leu Ile Asp Ala Ser
 115 120 125
 Glu Gly Arg Gly Gly Ala Leu Lys Lys Arg Glu Glu Val His Arg Met
 130 135 140
 Ala Glu Ala Asn Lys Ala Phe Ser His Phe Arg Phe
 145 150 155

<210> 20
 <211> 701
 <212> PRT
 <213> Neisseria meningitidis

<400> 20
 Met Ala Arg Lys Thr Pro Ile Ser Leu Tyr Arg Asn Ile Gly Ile Ser
 1 5 10 15
 Ala His Ile Asp Ala Gly Lys Thr Thr Thr Thr Glu Arg Ile Leu Phe
 20 25 30

Tyr Thr Gly Leu Thr His Lys Leu Gly Glu Val His Asp Gly Ala Ala
 35 40 45
 Thr Thr Asp Tyr Met Glu Gln Glu Arg Gly Ile Thr Ile Thr
 50 55 60
 Ser Ala Ala Val Thr Ser Tyr Trp Ser Gly Met Ala Lys Gln Phe Pro
 65 70 75 80
 Glu His Arg Phe Asn Ile Ile Asp Thr Pro Gly His Val Asp Phe Thr
 85 90 95
 Val Glu Val Glu Arg Ser Met Arg Val Leu Asp Gly Ala Val Met Val
 100 105 110
 Tyr Cys Ala Val Gly Gly Val Gln Pro Gln Ser Glu Thr Val Trp Arg
 115 120 125
 Gln Ala Asn Lys Tyr Gln Val Pro Arg Leu Ala Phe Val Asn Lys Met
 130 135 140
 Asp Arg Gln Gly Ala Asn Phe Phe Arg Val Val Glu Gln Met Lys Thr
 145 150 155 160
 Arg Leu Arg Ala Asn Pro Val Pro Ile Val Ile Pro Val Gly Ala Glu
 165 170 175
 Asp Asn Phe Ser Gly Val Val Asp Leu Leu Lys Met Lys Ser Ile Ile
 180 185 190
 Trp Asn Glu Val Asp Lys Gly Thr Thr Phe Thr Tyr Gly Asp Ile Pro
 195 200 205
 Ala Glu Leu Val Glu Thr Ala Glu Glu Trp Arg Gln Asn Met Ile Glu
 210 215 220
 Ala Ala Ala Glu Ala Ser Glu Glu Leu Met Asp Lys Tyr Leu Gly Gly
 225 230 235 240
 Asp Glu Leu Thr Glu Glu Glu Ile Val Gly Ala Leu Arg Gln Arg Thr
 245 250 255
 Leu Ala Gly Glu Ile Gln Pro Met Leu Cys Gly Ser Ala Phe Lys Asn
 260 265 270
 Lys Gly Val Gln Arg Met Leu Asp Ala Val Val Glu Leu Leu Pro Ala
 275 280 285
 Pro Thr Asp Ile Pro Pro Val Gln Gly Val Asn Pro Asn Thr Glu Glu
 290 295 300
 Ala Asp Ser Arg Gln Ala Ser Asp Glu Glu Lys Phe Ser Ala Leu Ala
 305 310 315 320
 Phe Lys Met Leu Asn Asp Lys Tyr Val Gly Gln Leu Thr Phe Ile Arg
 325 330 335
 Val Tyr Ser Gly Val Val Lys Ser Gly Asp Thr Val Leu Asn Ser Val
 340 345 350
 Lys Gly Thr Arg Glu Arg Ile Gly Arg Leu Val Gln Met Thr Ala Ala
 355 360 365

Asp Arg Thr Glu Ile Glu Glu Val Arg Ala Gly³⁰ Asp Ile Ala Ala Ala
 370 375 380
 Ile Gly Leu Lys Asp Val Thr Thr Gly Glu Thr Leu Cys Ala Glu Ser
 385 390 395 400
 Ala Pro Ile Ile Leu Glu Arg Met Glu Phe Pro Glu Pro Val Ile His
 405 410 415
 Ile Ala Val Glu Pro Lys Thr Lys Ala Asp Gln Glu Lys Met Gly Ile
 420 425 430
 Ala Leu Asn Arg Leu Ala Lys Glu Asp Pro Ser Phe Arg Val Arg Thr
 435 440 445
 Asp Glu Glu Ser Gly Gln Thr Ile Ile Ser Gly Met Gly Glu Leu His
 450 455 460
 Leu Glu Ile Ile Val Asp Arg Met Lys Arg Glu Phe Gly Val Glu Ala
 465 470 475 480
 Asn Ile Gly Ala Pro Gln Val Ala Tyr Arg Glu Thr Ile Arg Lys Ala
 485 490 495
 Val Lys Ala Glu Tyr Lys His Ala Lys Gln Ser Gly Gly Lys Gly Gln
 500 505 510
 Tyr Gly His Val Val Ile Glu Met Glu Pro Met Glu Pro Gly Gly Glu
 515 520 525
 Gly Tyr Glu Phe Ile Asp Glu Ile Lys Gly Gly Val Ile Pro Arg Glu
 530 535 540
 Phe Ile Pro Ser Val Asp Lys Gly Ile Arg Asp Thr Leu Pro Asn Gly
 545 550 555 560
 Ile Val Ala Gly Tyr Pro Val Val Asp Val Arg Ile Arg Leu Val Phe
 565 570 575
 Gly Ser Tyr His Asp Val Asp Ser Ser Gln Leu Ala Phe Glu Leu Ala
 580 585 590
 Ala Ser Gln Ala Phe Lys Glu Gly Met Arg Gln Ala Ser Pro Ala Leu
 595 600 605
 Leu Glu Pro Ile Met Ala Val Glu Val Glu Thr Pro Glu Glu Tyr Met
 610 615 620
 Gly Asp Val Met Gly Asp Leu Asn Arg Arg Arg Gly Val Val Leu Gly
 625 630 635 640
 Met Asp Asp Asp Gly Ile Gly Gly Lys Lys Val Arg Ala Glu Val Pro
 645 650 655
 Leu Ala Glu Met Phe Gly Tyr Ser Thr Asp Leu Arg Ser Ala Thr Gln
 660 665 670
 Gly Arg Ala Thr Tyr Ser Met Glu Phe Lys Lys Tyr Ser Glu Ala Pro
 675 680 685
 Ala His Ile Ala Ala Ala Val Thr Glu Ala Arg Lys Gly
 690 695 700

<211> 103
 <212> PRT
 <213> Neisseria meningitidis

<400> 21
 Met Ala Asn Gln Lys Ile Arg Ile Arg Leu Lys Ala Tyr Asp Tyr Ala
 1 5 10 15
 Leu Ile Asp Arg Ser Ala Gln Glu Ile Val Glu Thr Ala Lys Arg Thr
 20 25 30
 Gly Ala Val Val Lys Gly Pro Ile Pro Leu Pro Thr Lys Ile Glu Arg
 35 40 45
 Phe Asn Ile Leu Arg Ser Pro His Val Asn Lys Thr Ser Arg Glu Gln
 50 55 60
 Leu Glu Ile Arg Thr His Leu Arg Leu Met Asp Ile Val Asp Trp Thr
 65 70 75 80
 Asp Lys Thr Thr Asp Ala Leu Met Lys Leu Asp Leu Pro Ala Gly Val
 85 90 95
 Asp Val Glu Ile Lys Val Gln
 100

<210> 22
 <211> 214
 <212> PRT
 <213> Neisseria meningitidis

<400> 22
 Met Thr Leu Gly Leu Val Gly Arg Lys Val Gly Met Thr Arg Val Phe
 1 5 10 15
 Asp Glu Gln Gly Val Ser Val Pro Val Thr Val Leu Asp Met Ser Ala
 20 25 30
 Asn Arg Val Thr Gln Val Lys Ser Lys Asp Thr Asp Gly Tyr Thr Ala
 35 40 45
 Val Gln Val Thr Phe Gly Gln Lys Lys Ala Asn Arg Val Asn Lys Ala
 50 55 60
 Glu Ala Gly His Phe Ala Lys Ala Gly Val Glu Ala Gly Arg Gly Leu
 65 70 75 80
 Ile Glu Phe Ala Leu Thr Glu Glu Lys Leu Ala Glu Leu Lys Ala Gly
 85 90 95
 Asp Glu Ile Thr Val Ser Met Phe Glu Val Gly Gln Leu Val Asp Val
 100 105 110
 Thr Gly Thr Ser Lys Gly Lys Gly Phe Ser Gly Thr Ile Lys Arg His
 115 120 125
 Asn Phe Gly Ala Gln Arg Thr Ser His Gly Asn Ser Arg Ser His Arg
 130 135 140
 Val Pro Gly Ser Ile Gly Met Ala Gln Asp Pro Gly Arg Val Phe Pro
 145 150 155 160
 Gly Lys Arg Met Ala Gly Gln Tyr Gly Asn Thr Lys Ala Thr Val Gln
 165 170 175

Lys Leu Glu Val Val Arg Val Asp Ala Glu Arg Gln Leu Leu Leu Val
 180 185 190

Lys Gly Ala Val Pro Gly Ala Val Asn Ser Asp Val Val Val Arg Pro
 195 200 205

Ser Val Lys Val Gly Ala
 210

<210> 23
 <211> 206
 <212> PRT
 <213> Neisseria meningitidis

<400> 23
 Met Glu Leu Lys Val Ile Asp Ala Lys Gly Gln Val Ser Gly Ser Leu
 1 5 10 15

Ser Val Ser Asp Ala Leu Phe Ala Arg Glu Tyr Asn Glu Ala Leu Val
 20 25 30

His Gln Leu Val Asn Ala Tyr Leu Ala Asn Ala Arg Ser Gly Asn Arg
 35 40 45

Ala Gln Lys Thr Arg Ala Glu Val Lys His Ser Thr Lys Lys Pro Trp
 50 55 60

Arg Gln Lys Gly Thr Gly Arg Ala Arg Ser Gly Met Thr Ser Ser Pro
 65 70 75 80

Leu Trp Arg Lys Gly Gly Arg Ala Phe Pro Asn Lys Pro Asp Glu Asn
 85 90 95

Phe Thr Gln Lys Val Asn Arg Lys Met Tyr Arg Ala Gly Met Ala Thr
 100 105 110

Ile Leu Ser Gln Leu Thr Arg Asp Glu Arg Leu Phe Ala Ile Glu Ala
 115 120 125

Leu Thr Ala Glu Thr Pro Lys Thr Lys Val Phe Ala Glu Gln Val Lys
 130 135 140

Asn Leu Gly Leu Glu Gln Val Leu Phe Val Thr Lys Gln Leu Asp Glu
 145 150 155 160

Asn Val Tyr Leu Ala Ser Arg Asn Leu Pro Asn Val Leu Val Leu Glu
 165 170 175

Ala Gln Gln Val Asp Pro Tyr Ser Leu Leu Arg Tyr Lys Lys Val Ile
 180 185 190

Ile Thr Lys Asp Ala Val Ala Gln Leu Glu Glu Gln Trp Val
 195 200 205

<210> 24
 <211> 104
 <212> PRT
 <213> Neisseria meningitidis

<400> 24
 Met Asn Gln Gln Arg Leu Thr Gln Val Ile Leu Ala Pro Ile Val Ser
 1 5 10 15

Glu Lys Ser Asn Val Leu Ala Glu Lys Arg Asn Gln Met Thr Phe Lys
 20 25 30
 Val Leu Ala Asn Ala Thr Lys Pro Glu Ile Lys Ala Ala Val Glu Leu
 35 40 45
 Leu Phe Gly Val Gln Val Ala Asp Val Thr Thr Val Thr Ile Lys Gly
 50 55 60
 Lys Val Lys Arg Phe Gly Arg Thr Leu Gly Arg Arg Ser Asp Val Lys
 65 70 75 80
 Lys Ala Tyr Val Ser Leu Ala Ala Gly Gln Glu Leu Asp Leu Glu Ala
 85 90 95
 Ala Ala Ala Ala Ala Asp Lys Glu
 100

<210> 25
 <211> 179
 <212> PRT
 <213> Neisseria meningitidis

<400> 25
 Met Ala Arg Leu Arg Glu Phe Tyr Lys Glu Thr Val Val Pro Glu Leu
 1 5 10 15
 Val Lys Gln Phe Gly Tyr Lys Ser Val Met Glu Val Pro Arg Ile Glu
 20 25 30
 Lys Ile Thr Leu Asn Met Gly Val Gly Glu Ala Val Ala Asp Lys Lys
 35 40 45
 Val Met Glu His Ala Val Ser Asp Leu Glu Lys Ile Ala Gly Gln Lys
 50 55 60
 Pro Val Val Thr Val Ala Arg Lys Ser Ile Ala Gly Phe Lys Ile Arg
 65 70 75 80
 Asp Asn Tyr Pro Val Gly Cys Lys Val Thr Leu Arg Arg Asp Gln Met
 85 90 95
 Phe Glu Phe Leu Asp Arg Leu Ile Thr Ile Ala Leu Pro Arg Val Arg
 100 105 110
 Asp Phe Arg Gly Val Ser Gly Lys Ser Phe Asp Gly Arg Gly Asn Tyr
 115 120 125
 Asn Met Gly Val Arg Glu Gln Ile Ile Phe Pro Glu Ile Glu Tyr Asp
 130 135 140
 Lys Ile Asp Ala Leu Arg Gly Leu Asn Ile Thr Ile Thr Thr Thr Ala
 145 150 155 160
 Lys Thr Asp Glu Glu Ala Lys Ala Leu Leu Ser Leu Phe Lys Phe Pro
 165 170 175
 Phe Lys Gly

<210> 26
 <211> 130
 <212> PRT
 <213> Neisseria meningitidis

<400> 26
 Met Ser Met His Asp Pro Ile Ser Asp Met Leu Thr Arg Ile Arg Asn
 1 5 10 15
 Ala Gln Arg Ala Asn Lys Ala Ala Val Ala Met Pro Ser Ser Lys Leu
 20 25 30
 Lys Cys Ala Ile Ala Lys Val Leu Lys Glu Glu Gly Tyr Ile Glu Asp
 35 40 45
 Phe Ala Val Ser Ser Asp Val Lys Ser Ile Leu Glu Ile Gln Leu Lys
 50 55 60
 Tyr Tyr Ala Gly Arg Pro Val Ile Glu Gln Ile Lys Arg Val Ser Arg
 65 70 75 80
 Pro Gly Leu Arg Ile Tyr Lys Ala Ser Ser Glu Ile Pro Ser Val Met
 85 90 95
 Asn Gly Leu Gly Ile Ala Ile Val Ser Thr Ser Lys Gly Val Met Thr
 100 105 110
 Asp Arg Lys Ala Arg Ser Gln Gly Val Gly Gly Glu Leu Leu Cys Ile
 115 120 125
 Val Ala
 130

<210> 27
 <211> 177
 <212> PRT
 <213> Neisseria meningitidis

<400> 27
 Met Ser Arg Val Ala Lys Asn Pro Val Thr Val Pro Ala Gly Val Glu
 1 5 10 15
 Val Lys Phe Gly Ala Glu Ala Leu Val Ile Lys Gly Lys Asn Gly Glu
 20 25 30
 Leu Ser Phe Pro Leu His Ser Asp Val Ala Ile Glu Phe Asn Asp Gly
 35 40 45
 Lys Leu Thr Phe Val Ala Asn Asn Ser Ser Lys Gln Ala Asn Ala Met
 50 55 60
 Ser Gly Thr Ala Arg Ala Leu Val Ser Asn Met Val Lys Gly Val Ser
 65 70 75 80
 Glu Gly Phe Glu Lys Arg Leu Gln Leu Ile Gly Val Gly Tyr Arg Ala
 85 90 95
 Gln Ala Gln Gly Lys Ile Leu Asn Leu Ser Leu Gly Phe Ser His Pro
 100 105 110
 Ile Val Tyr Glu Met Pro Glu Gly Val Ser Val Gln Thr Pro Ser Gln
 115 120 125
 Thr Glu Ile Val Leu Thr Gly Ser Asp Lys Gln Val Val Gly Gln Val
 130 135 140
 Ala Ala Glu Ile Arg Ala Phe Arg Ala Pro Glu Pro Tyr Lys Gly Lys
 145 150 155 160

Gly Val Arg Tyr Val Gly Glu Val Val Val Met Lys Glu Ala Lys Lys
 165 170 175

Lys

<210> 28
 <211> 172
 <212> PRT
 <213> Neisseria meningitidis

<400> 28
 Met Ala Lys His Glu Ile Glu Glu Arg Gly Asp Gly Leu Ile Glu Lys
 1 5 10 15

Met Val Ala Val Asn Arg Val Thr Lys Val Val Lys Gly Gly Arg Ile
 20 25 30

Met Ala Phe Ser Ala Leu Thr Val Val Gly Asp Gly Asp Gly Arg Ile
 35 40 45

Gly Met Gly Lys Gly Lys Ser Lys Glu Val Pro Val Ala Val Gln Lys
 50 55 60

Ala Met Asp Gln Ala Arg Arg Ser Met Ile Lys Val Pro Leu Lys Asn
 65 70 75 80

Gly Thr Ile His His Glu Val Ile Gly Arg His Gly Ala Thr Lys Val
 85 90 95

Phe Met Gln Pro Ala Lys Glu Gly Ser Gly Val Lys Ala Gly Gly Pro
 100 105 110

Met Arg Leu Val Phe Asp Ala Met Gly Ile His Asn Ile Ser Ala Lys
 115 120 125

Val His Gly Ser Thr Asn Pro Tyr Asn Ile Val Arg Ala Thr Leu Asp
 130 135 140

Gly Leu Ser Lys Leu His Thr Pro Ala Asp Ile Ala Ala Lys Arg Gly
 145 150 155 160

Leu Thr Val Glu Asp Ile Leu Gly Val Asn His Gly
 165 170

<210> 29
 <211> 328
 <212> PRT
 <213> Neisseria meningitidis

<400> 29
 Met Gln Asn Ser Thr Thr Glu Phe Leu Lys Pro Arg Gln Ile Asp Val
 1 5 10 15

Asn Thr Phe Ser Ala Thr Arg Ala Lys Val Ser Met Gln Pro Phe Glu
 20 25 30

Arg Gly Phe Gly His Thr Leu Gly Asn Ala Leu Arg Arg Ile Leu Leu
 35 40 45

Ser Ser Met Asn Gly Phe Ala Pro Thr Glu Val Ala Ile Ala Gly Val
 50 55 60

Leu His Glu Tyr Ser Thr Val Asp Gly Ile Gln³⁶ Glu Asp Val Val Asp
 65 70 75 80
 Ile Leu Leu Asn Ile Lys Gly Ile Val Phe Lys Leu His Gly Arg Ser
 85 90 95
 Gln Val Gln Leu Val Leu Lys Lys Ser Gly Ser Gly Val Val Ser Ala
 100 105 110
 Gly Asp Ile Glu Leu Pro His Asp Val Glu Ile Leu Asn Pro Gly His
 115 120 125
 Val Ile Cys His Leu Ala Asp Asn Gly Gln Ile Glu Met Glu Ile Lys
 130 135 140
 Val Glu Gln Gly Arg Gly Tyr Gln Ser Val Ser Gly Arg Gln Val Val
 145 150 155 160
 Arg Asp Glu Asn Arg Gln Ile Gly Ala Ile Gln Leu Asp Ala Ser Phe
 165 170 175
 Ser Pro Ile Ser Arg Val Ser Phe Glu Val Glu Pro Ala Arg Val Glu
 180 185 190
 Gln Arg Thr Asp Leu Asp Lys Leu Val Leu Asp Ile Glu Thr Asp Gly
 195 200 205
 Ser Ile Asp Pro Glu Glu Ala Val Arg Ser Ala Ala Arg Ile Leu Ile
 210 215 220
 Asp Gln Met Ser Ile Phe Ala Asp Leu Gln Gly Thr Pro Val Glu Glu
 225 230 235 240
 Val Glu Glu Lys Ala Pro Pro Ile Asp Pro Val Leu Leu Arg Pro Val
 245 250 255
 Asp Asp Leu Glu Leu Thr Val Arg Ser Ala Asn Cys Leu Lys Ala Glu
 260 265 270
 Asp Ile Tyr Tyr Ile Gly Asp Leu Ile Gln Arg Thr Glu Thr Glu Leu
 275 280 285
 Leu Lys Thr Pro Asn Leu Gly Arg Lys Ser Leu Asn Glu Ile Lys Glu
 290 295 300
 Val Leu Ala Ser Lys Gly Leu Thr Leu Gly Ser Lys Leu Glu Ala Trp
 305 310 315 320
 Pro Pro Val Gly Leu Glu Lys Pro
 325

<210> 30
 <211> 271
 <212> PRT
 <213> Neisseria meningitidis

<400> 30
 Met Ala Lys Ile Ile Val Val Thr Ser Gly Lys Gly Gly Val Gly Lys
 1 5 10 15
 Thr Thr Thr Ser Ala Ser Ile Ala Thr Gly Leu Ala Leu Arg Gly Tyr
 20 25 30
 Lys Thr Ala Val Ile Asp Phe Asp Val Gly Leu Arg Asn Leu Asp Leu

35 40 37 45
 Ile Met Gly Cys Glu Arg Arg Val Val Tyr Asp Leu Ile Asn Val Ile
 50 55 60
 Gln Gly Glu Ala Thr Leu Asn Gln Ala Leu Ile Lys Asp Lys Asn Cys
 65 70 75 80
 Glu Asn Leu Phe Ile Leu Pro Ala Ser Gln Thr Arg Asp Lys Asp Ala
 85 90 95
 Leu Thr Arg Glu Gly Val Glu Lys Val Met Gln Glu Leu Ser Gly Lys
 100 105 110
 Lys Met Gly Phe Glu Tyr Ile Ile Cys Asp Ser Pro Ala Gly Ile Glu
 115 120 125
 Gln Gly Ala Leu Met Ala Leu Tyr Phe Ala Asp Glu Ala Ile Val Thr
 130 135 140
 Thr Asn Pro Glu Val Ser Ser Val Arg Asp Ser Asp Arg Ile Leu Gly
 145 150 155 160
 Ile Leu Gln Ser Lys Ser His Lys Ala Glu Gln Gly Gly Ser Val Lys
 165 170 175
 Glu His Leu Leu Ile Thr Arg Tyr Ser Pro Glu Arg Val Ala Lys Gly
 180 185 190
 Glu Met Leu Ser Val Gln Asp Ile Cys Asp Ile Leu His Ile Pro Leu
 195 200 205
 Leu Gly Val Ile Pro Glu Ser Gln Asn Val Leu Gln Ala Ser Asn Ser
 210 215 220
 Gly Glu Pro Val Ile His Gln Asp Ser Val Ala Ala Ser Glu Ala Tyr
 225 230 235 240
 Lys Asp Val Ile Ala Arg Leu Leu Gly Glu Asn Arg Glu Met Arg Phe
 245 250 255
 Leu Glu Ala Glu Lys Lys Ser Phe Phe Lys Arg Leu Phe Gly Gly
 260 265 270

<210> 31
 <211> 306
 <212> PRT
 <213> Neisseria meningitidis

<400> 31
 Met Thr Leu Thr Glu Leu Arg Tyr Ile Val Ala Val Ala Gln Glu Arg
 1 5 10 15
 His Phe Gly Arg Ala Ala Arg Arg Cys Phe Val Ser Gln Pro Thr Leu
 20 25 30
 Ser Ile Ala Ile Lys Lys Leu Glu Glu Glu Leu Ala Val Ser Leu Phe
 35 40 45
 Asp Arg Ser Ser Asn Asp Ile Ile Thr Thr Glu Ala Gly Glu Arg Ile
 50 55 60
 Val Ala Gln Ala Arg Lys Val Leu Glu Glu Ala Glu Leu Ile Arg His
 65 70 75 80

Leu Ala Asn Glu Glu Gln Asn Glu Leu Glu Gly Ala Phe Lys Leu Gly
 85 90 95
 Leu Ile Phe Thr Val Ala Pro Tyr Leu Leu Pro Lys Leu Ile Val Ser
 100 105 110
 Leu Arg Arg Thr Ala Pro Lys Met Pro Leu Met Leu Glu Glu Asn Tyr
 115 120 125
 Thr His Thr Leu Thr Glu Ser Leu Lys Arg Gly Asp Val Asp Ala Ile
 130 135 140
 Ile Val Ala Glu Pro Phe Gln Glu Pro Gly Ile Val Thr Glu Pro Leu
 145 150 155 160
 Tyr Asp Glu Pro Phe Phe Val Ile Val Pro Lys Gly His Ser Phe Glu
 165 170 175
 Glu Leu Asp Ala Val Ser Pro Arg Met Leu Gly Glu Glu Gln Val Leu
 180 185 190
 Leu Leu Thr Glu Gly Asn Cys Met Arg Asp Gln Val Leu Ser Ser Cys
 195 200 205
 Ser Glu Leu Ala Ala Lys Gln Arg Ile Gln Gly Leu Thr Asn Thr Leu
 210 215 220
 Gln Gly Ser Ser Ile Asn Thr Ile Arg His Met Val Ala Ser Gly Leu
 225 230 235 240
 Ala Ile Ser Val Leu Pro Ala Thr Ala Leu Thr Glu Asn Asp His Met
 245 250 255
 Leu Phe Ser Ile Ile Pro Phe Glu Gly Thr Pro Pro Ser Arg Arg Val
 260 265 270
 Val Leu Ala Tyr Arg Arg Asn Phe Val Arg Pro Lys Ala Leu Ser Ala
 275 280 285
 Met Lys Ala Ala Ile Met Gln Ser Gln Leu His Gly Val Ser Phe Ile
 290 295 300
 Cys Asp
 305

<210> 32
 <211> 631
 <212> PRT
 <213> Neisseria meningitidis

<400> 32
 Met Thr His Met Ile Tyr Pro Lys Thr Tyr Asp Val Ile Val Val Gly
 1 5 10 15
 Gly Gly His Ala Gly Thr Glu Ala Ala Leu Ala Ala Ala Arg Met Gly
 20 25 30
 Ala Gln Thr Leu Leu Leu Ser His Asn Ile Glu Thr Leu Gly Gln Met
 35 40 45
 Ser Cys Asn Pro Ser Ile Gly Gly Ile Gly Lys Gly His Leu Val Arg
 50 55 60

Glu Leu Asp Ala Leu Gly Gly Ala Met Ala Leu Ala Thr Asp Lys Ser
 65 70 75 80
 Gly Ile Gln Phe Arg Arg Leu Asn Ala Ser Lys Gly Ala Ala Val Arg
 85 90 95
 Ala Thr Arg Ala Gln Ala Asp Arg Ile Leu Tyr Lys Ala Ala Ile Arg
 100 105 110
 Glu Met Leu Glu Asn Gln Glu Asn Leu Asp Leu Phe Gln Gln Ala Val
 115 120 125
 Glu Asp Val Thr Leu Asp Gly Glu Arg Ile Ser Gly Val Ile Thr Ala
 130 135 140
 Met Gly Val Glu Phe Lys Ala Arg Ala Val Val Leu Thr Ala Gly Thr
 145 150 155 160
 Phe Leu Ser Gly Lys Ile His Ile Gly Leu Glu Asn Tyr Glu Gly Gly
 165 170 175
 Arg Ala Gly Asp Pro Ala Ala Lys Ser Leu Gly Gly Arg Leu Arg Glu
 180 185 190
 Leu Lys Leu Pro Gln Gly Arg Leu Lys Thr Gly Thr Pro Pro Arg Ile
 195 200 205
 Asp Gly Arg Thr Ile Asp Phe Ser Gln Leu Thr Glu Gln Pro Gly Asp
 210 215 220
 Thr Pro Val Pro Val Met Ser Val Arg Gly Asn Ala Asp Met His Pro
 225 230 235 240
 Arg Gln Val Ser Cys Trp Ile Thr His Thr Asn Thr Gln Thr His Asp
 245 250 255
 Ile Ile Arg Ser Gly Phe Asp Arg Ser Pro Met Phe Thr Gly Lys Ile
 260 265 270
 Glu Gly Val Gly Pro Arg Tyr Cys Pro Ser Ile Glu Asp Lys Ile Asn
 275 280 285
 Arg Phe Ala Asp Lys Asp Ser His Gln Ile Phe Leu Glu Pro Glu Gly
 290 295 300
 Leu Thr Thr His Glu Tyr Tyr Pro Asn Gly Ile Ser Thr Ser Leu Pro
 305 310 315 320
 Phe Asp Ile Gln Ile Ala Leu Val Arg Ser Met Lys Gly Leu Glu Asn
 325 330 335
 Ala His Ile Leu Arg Pro Gly Tyr Ala Ile Glu Tyr Asp Tyr Phe Asp
 340 345 350
 Pro Arg Asn Leu Lys Ala Ser Leu Glu Thr Lys Thr Ile Ala Gly Leu
 355 360 365
 Phe Phe Ala Gly Gln Ile Asn Gly Thr Thr Gly Tyr Glu Glu Ala Ala
 370 375 380
 Ala Gln Gly Leu Leu Ala Gly Ala Asn Ala Val Gln Tyr Val Arg Gly
 385 390 395 400
 Gln Asp Pro Leu Leu Leu Arg Arg Glu Gln Ala Tyr Leu Gly Val Leu

Tyr	Glu	Gly	Gly	Arg 85	Ala	Arg	Ile	Gln	Asp 90	Val	Leu	Lys	Glu	Gly 95	Met
Glu	Val	Ile	Val 100	Gln	Val	Glu	Lys	Asp 105	Glu	Arg	Gly	Asn	Lys 110	Gly	Ala
Ala	Leu	Thr 115	Thr	Phe	Ile	Ser	Leu 120	Ala	Gly	Arg	Tyr	Leu 125	Val	Leu	Met
Pro	Asn 130	Asn	Pro	Arg	Gly	Gly 135	Gly	Val	Ser	Arg	Arg 140	Ile	Glu	Gly	Glu
Glu 145	Arg	Gln	Glu	Leu	Lys 150	Ala	Ala	Met	Ala	Glu 155	Leu	Asp	Ile	Pro	Asn 160
Gly	Met	Ser	Ile	Ile 165	Ala	Arg	Thr	Ala	Gly 170	Ile	Gly	Arg	Ser	Ala 175	Glu
Glu	Leu	Glu	Trp 180	Asp	Leu	Asn	Tyr	Leu 185	Lys	Gln	Leu	Trp	Gln 190	Ala	Ile
Glu	Glu	Ala 195	Gly	Lys	Ala	His	His 200	Asp	Pro	Tyr	Leu	Leu 205	Phe	Met	Glu
Ser	Ser 210	Leu	Leu	Ile	Arg	Ala 215	Ile	Arg	Asp	Tyr	Phe 220	Arg	Pro	Asp	Ile
Gly 225	Glu	Ile	Leu	Val	Asp 230	Asn	Gln	Glu	Val	Tyr 235	Asp	Gln	Val	Ala	Glu 240
Phe	Met	Ser	Tyr	Val 245	Met	Pro	Gly	Asn	Ile 250	Gly	Arg	Leu	Lys	Leu 255	Tyr
Glu	Asp	His	Thr 260	Pro	Leu	Phe	Ser	Arg 265	Phe	Gln	Ile	Glu	His 270	Gln	Ile
Glu	Ser	Ala 275	Phe	Ser	Arg	Ser	Val 280	Ser	Leu	Pro	Ser	Gly 285	Gly	Ala	Ile
Val	Ile 290	Asp	His	Thr	Glu	Ala 295	Leu	Val	Ser	Ile	Asp 300	Val	Asn	Ser	Ala
Arg 305	Ala	Thr	Arg	Gly	Ala 310	Asp	Ile	Glu	Asp	Thr 315	Ala	Phe	Lys	Thr	Asn 320
Met	Glu	Ala	Ala	Glu 325	Glu	Val	Ala	Arg	Gln 330	Met	Arg	Leu	Arg	Asp 335	Leu
Gly	Gly	Leu	Val 340	Val	Ile	Asp	Phe	Ile 345	Asp	Met	Glu	Asn	Pro 350	Lys	His
Gln	Arg	Asp 355	Val	Glu	Asn	Val	Leu 360	Arg	Asp	Ala	Leu	Lys 365	Lys	Asp	Arg
Ala	Arg 370	Val	Gln	Met	Gly	Lys 375	Leu	Ser	Arg	Phe	Gly 380	Leu	Leu	Glu	Leu
Ser 385	Arg	Gln	Arg	Leu	Lys 390	Pro	Ala	Leu	Gly	Glu 395	Ser	Ser	His	Val	Ala 400
Cys	Pro	Arg	Cys	Ala 405	Gly	Thr	Gly	Val	Ile 410	Arg	Gly	Ile	Glu	Ser 415	Thr

42

Ala Leu His Val Leu Arg Ile Ile Gln Glu Glu Ala Met Lys Asp Asn
420 425 430

Thr Gly Glu Val Arg Ala Gln Val Pro Val Asp Val Ala Thr Phe Leu
435 440 445

Leu Asn Glu Lys Arg Ala Glu Leu Phe Ala Met Glu Glu Arg Leu Asp
450 455 460

Val Asn Val Val Leu Ile Pro Asn Ile His Leu Glu Asn Pro His Tyr
465 470 475 480

Glu Ile Asn Arg Ile Arg Thr Asp Asp Val Glu Glu Asp Gly Glu Pro
485 490 495

Ser Tyr Lys Arg Val Ala Glu Pro Glu Glu Asp Glu Ser Ala Lys Pro
500 505 510

Phe Gly Gly Glu Lys Ala Lys Ala Ala Arg Pro Glu Pro Ala Val Lys
515 520 525

Gly Val Arg His Thr Ser Pro Ala Pro Thr Ala Ala Pro Glu Lys Lys
530 535 540

Thr Ser Trp Trp Asp Ser Phe Lys Ala Trp Leu Lys Arg Ile Phe Gly
545 550 555 560

Gly Ser Glu Thr Gln Ala Ala Pro Ala Ala Glu Thr Ser Glu Lys Arg
565 570 575

Ser Thr Ala Asn Arg Ser Gly Ser Arg Ala Asn Asn Arg Arg Gln Asn
580 585 590

Pro Arg Arg Ser Lys Arg Glu Gly Ser Lys Val Glu Val Arg Glu Val
595 600 605

Ala Gly Lys Thr Ala Gly Gln Glu Ala Arg Ala Asp Lys Ala Glu Thr
610 615 620

Arg Asn Asn Gly Asn Arg Arg Arg Asn Glu Arg Gly Asp Arg Ala Ala
625 630 635 640

Glu Arg Ala Asn Glu Ala Glu Ile Gln Ser Arg Asn Val Gln Pro Ala
645 650 655

Ala Thr Val Ala Asp Ala Ala Pro Ser Glu Thr Glu Val Gln Thr Gly
660 665 670

Lys Arg Arg Arg Asn Gly Ser Arg Ser Glu Arg Gly Gln Thr Ala Pro
675 680 685

Glu Thr Ala Thr Val Ala Glu Thr Thr Val Gln Thr Ala Glu Asn Thr
690 695 700

Pro Ser Glu Pro His Thr Ala Glu Asp Lys Gly Ser Lys Pro Lys Ser
705 710 715 720

Glu Arg Asn Arg Arg Glu Arg Asp Ser Arg Asp Ala Lys Glu Arg Arg
725 730 735

Glu Arg Asn Asn Gln Arg Asp Arg Arg Gln Asn Gly Lys Lys Arg Asn
740 745 750

Ile Pro Ser Ala Ala Lys Ile Glu Gln Tyr Leu Asn Ile His Asp Thr

755 760 765
 Ala Asp Lys Val Arg Ser Ala Ala Ala His Val Phe Gly Glu Thr Asp
 770 775 780
 Ala Asn Ala Pro Ile Thr Val Ser Ile Ala Asp Pro Val Ala Glu Arg
 785 790 795 800
 Asp Leu Pro Thr Ala Ser Pro Ala Val Ser Asn Gly Asp Ala Pro Val
 805 810 815
 Tyr Asp Ala Ala Glu Lys Ile Arg Arg Ala Thr Ala Ala Ile Leu Pro
 820 825 830
 Glu Gly Ala Thr Pro Lys Ala Glu Ala Gln Glu Met Pro Ser Glu Thr
 835 840 845
 Ala Thr Phe Thr Ala Ala Ala Glu Gln Ala Arg Glu Thr Ala Gln Thr
 850 855 860
 Gly Gly Leu Val Leu Ile Glu Thr Asp Pro Ala Ala Leu Lys Ala Trp
 865 870 875 880
 Ala Ala Gln Pro Glu Val Gln Ala Gly Arg Gly Leu Arg Arg Ser Glu
 885 890 895
 Gln Pro Lys Pro Ser Glu Val Ala Thr Val Pro Ala Glu Glu Met Ile
 900 905 910
 Gln Val Glu Thr Arg Gln Gly
 915

<210> 34
 <211> 796
 <212> PRT
 <213> Neisseria meningitidis

<400> 34
 Met Thr Glu Gln Lys His Glu Glu Tyr Gly Ala Asp Ser Ile Gln Val
 1 5 10 15
 Leu Glu Gly Leu Glu Ala Val Arg Lys Arg Pro Gly Met Tyr Ile Gly
 20 25 30
 Asp Thr Gln Asp Gly Ser Gly Leu His His Met Val Phe Glu Val Leu
 35 40 45
 Asp Asn Ala Ile Asp Glu Ala Leu Ala Gly His Cys Asp Lys Ile Thr
 50 55 60
 Val Thr Ile His Ala Asp His Ser Val Ser Val Ala Asp Asn Gly Arg
 65 70 75 80
 Gly Met Pro Thr Gly Ile His Pro Lys Glu Gly Arg Ser Ala Ala Glu
 85 90 95
 Val Ile Met Thr Val Leu His Ala Gly Gly Lys Phe Asp Asn Asn Ser
 100 105 110
 Tyr Lys Ile Ser Gly Gly Leu His Gly Val Gly Val Ser Val Val Asn
 115 120 125
 Ala Leu Ser Asp Trp Val Thr Leu Thr Ile Tyr Arg Asp Gly Lys Glu
 130 135 140

His Phe Val Arg Phe Val Arg Gly Glu Thr Glu Glu Pro Leu Lys Ile
 145 150 155 160
 Val Gly Asp Ser Asp Lys Lys Gly Thr Thr Val Arg Phe Leu Ala Ser
 165 170 175
 Thr Glu Thr Phe Gly Asn Val Glu Tyr Ser Phe Asp Ile Leu Ala Lys
 180 185 190
 Arg Ile Arg Glu Leu Ser Phe Leu Asn Asn Gly Val Asp Ile Glu Leu
 195 200 205
 Thr Asp Glu Arg Asp Gly Lys His Glu Ser Phe Ala Leu Ser Gly Gly
 210 215 220
 Val Ala Gly Phe Val Gln Tyr Met Asn Arg Lys Lys Thr Pro Leu His
 225 230 235 240
 Glu Lys Ile Phe Tyr Ala Phe Gly Glu Lys Asp Gly Met Ser Val Glu
 245 250 255
 Cys Ala Met Gln Trp Asn Asp Ser Tyr Gln Glu Ser Val Gln Cys Phe
 260 265 270
 Thr Asn Asn Ile Pro Gln Arg Asp Gly Gly Thr His Leu Thr Ala Leu
 275 280 285
 Arg Gln Val Met Thr Arg Thr Ile Asn Asn Tyr Ile Glu Ala Asn Glu
 290 295 300
 Val Ala Lys Lys Ala Lys Val Glu Thr Ala Gly Asp Asp Met Arg Glu
 305 310 315 320
 Gly Leu Thr Cys Val Leu Ser Val Lys Leu Pro Asp Pro Lys Phe Ser
 325 330 335
 Ser Gln Thr Lys Asp Lys Leu Val Ser Gly Glu Ile Gly Pro Val Val
 340 345 350
 Asn Glu Val Ile Ser Gln Ala Leu Thr Asp Phe Leu Glu Glu Asn Pro
 355 360 365
 Asn Glu Ala Lys Ile Ile Thr Gly Lys Ile Val Asp Ala Ala Arg Ala
 370 375 380
 Arg Glu Ala Ala Arg Lys Ala Arg Glu Ile Thr Arg Arg Lys Gly Val
 385 390 395 400
 Met Asp Gly Leu Gly Leu Pro Gly Lys Leu Ala Asp Cys Gln Glu Lys
 405 410 415
 Asp Pro Ala Leu Ser Glu Leu Tyr Leu Val Glu Gly Asp Ser Ala Gly
 420 425 430
 Gly Ser Ala Met Gln Gly Arg Asp Arg Lys Phe Gln Ala Ile Leu Pro
 435 440 445
 Leu Lys Gly Lys Ile Leu Asn Val Glu Lys Ala Arg Phe Glu Lys Met
 450 455 460
 Leu Ala Ser Gln Glu Val Ala Thr Leu Ile Thr Ala Leu Gly Ala Gly
 465 470 475 480

Ile Gly Lys Glu Glu Phe Asn Ala Glu Lys⁴⁵ Leu Arg Tyr His Arg Ile
 485 490 495
 Ile Ile Met Thr Asp Ala Asp Val Asp Gly Ala His Ile Arg Thr Leu
 500 505 510
 Leu Leu Thr Phe Phe Tyr Arg Gln Met Pro Glu Leu Val Glu Arg Gly
 515 520 525
 Tyr Ile Tyr Ile Ala Gln Pro Pro Leu Tyr Lys Ala Lys Tyr Gly Lys
 530 535 540
 Gln Glu Arg Tyr Leu Lys Asp Glu Leu Glu Lys Asp Gln Trp Leu Leu
 545 550 555 560
 Gly Leu Ala Leu Glu Lys Ala Lys Ile Ile Ser Asp Gly Arg Thr Ile
 565 570 575
 Glu Gly Ala Glu Leu Ala Asp Thr Ala Lys Gln Phe Leu Leu Ala Lys
 580 585 590
 Thr Val Ile Glu Gln Glu Ser Arg Phe Val Asp Glu Leu Val Leu Arg
 595 600 605
 Ala Met Leu His Ala Ser Pro Ile Asp Leu Thr Ser Ser Glu Asn Ala
 610 615 620
 Asp Lys Ala Val Ala Glu Leu Ser Gly Leu Leu Asp Glu Lys Glu Val
 625 630 635 640
 Ala Leu Glu Arg Ile Glu Gly His Glu Gly His Arg Phe Ile Lys Ile
 645 650 655
 Thr Arg Lys Leu His Gly Asn Val Met Val Ser Tyr Ile Glu Pro Lys
 660 665 670
 Phe Leu Asn Ser Lys Ala Tyr Gln Thr Leu Thr Gln Thr Ala Ala Ala
 675 680 685
 Leu Lys Gly Met Val Gly Glu Gly Ala Lys Leu Tyr Lys Gly Glu Asn
 690 695 700
 Gly Tyr Asp Ala Asp Ser Phe Glu Thr Ala Leu Asp Ile Leu Met Ser
 705 710 715 720
 Val Ala Gln Lys Gly Met Ser Ile Gln Arg Tyr Lys Gly Leu Gly Glu
 725 730 735
 Met Asn Pro Glu Gln Leu Trp Glu Thr Thr Met Asp Pro Ala Val Arg
 740 745 750
 Arg Leu Leu Lys Val Arg Ile Glu Asp Ala Ile Ala Ala Asp Glu Val
 755 760 765
 Phe Val Thr Leu Met Gly Asp Glu Val Glu Pro Arg Arg Ala Phe Ile
 770 775 780
 Glu Asn Asn Ala Leu Ile Ala Gln Asn Ile Asp Ala
 785 790 795

<210>

35

<211>

415

<212>

PRT

<213>

Neisseria meningitidis

<400> 35
 Met Ser Gln Arg Arg Val Val Ile Thr Gly Leu Gly Gln Val Ser Pro
 1 5 10 15
 Val Gly Asn Thr Val Ala Glu Ala Trp Asp Thr Leu Leu Thr Gly Lys
 20 25 30
 Ser Gly Ile Gly Ala Ile Thr Arg Phe Asp Thr Ser Asp Ile Asn Ser
 35 40 45
 Arg Val Ala Gly Glu Val Arg Gly Phe Asp Ile Gly Gln Tyr Ile Ser
 50 55 60
 Ala Lys Glu Ala Arg Arg Met Asp Val Phe Ile His Tyr Gly Ile Ala
 65 70 75 80
 Ala Ala Leu Gln Ala Ile Ala Asp Ser Gly Leu Asp Asp Val Glu Asn
 85 90 95
 Leu Asp Lys Asp Arg Ile Gly Val Asn Ile Gly Ser Gly Ile Gly Gly
 100 105 110
 Leu Pro Gly Ile Glu Val Thr Gly Lys Ala Val Ile Glu Gly Gly Ala
 115 120 125
 Arg Lys Ile Asn Pro Phe Phe Ile Pro Gly Ser Leu Ile Asn Leu Ile
 130 135 140
 Ser Gly His Val Thr Ile Leu Lys Gly Tyr Arg Gly Pro Ser Tyr Gly
 145 150 155 160
 Met Val Ser Ala Cys Thr Thr Gly Ala His Ala Ile Gly Asp Ser Leu
 165 170 175
 Arg Met Ile Lys Tyr Gly Asp Ala Asp Ile Met Val Ala Gly Gly Ala
 180 185 190
 Glu Gly Ala Ile Ser Thr Leu Gly Val Gly Gly Phe Ala Ala Met Lys
 195 200 205
 Ala Leu Ser Thr Arg Asn Asp Asp Pro Ala Thr Ala Ser Arg Pro Trp
 210 215 220
 Asp Lys Gly Arg Asp Gly Phe Val Ile Gly Glu Gly Ala Gly Ile Leu
 225 230 235 240
 Val Leu Glu Glu Leu Glu His Ala Lys Lys Arg Gly Ala Lys Ile Tyr
 245 250 255
 Ala Glu Ile Val Gly Phe Gly Met Ser Ser Asp Ala Tyr His Ile Thr
 260 265 270
 Ala Pro Asn Glu Glu Gly Pro Ala Leu Ala Val Thr Arg Ala Leu Lys
 275 280 285
 Asp Ala Gly Ile Asn Pro Glu Asp Val Asp Tyr Val Asn Ala His Gly
 290 295 300
 Thr Ser Thr Pro Leu Gly Asp Ala Asn Glu Thr Lys Ala Leu Lys Arg
 305 310 315 320
 Ala Phe Gly Glu His Ala Tyr Lys Thr Val Val Ser Ser Thr Lys Ser
 325 330 335

Met Thr Gly His Leu Leu Gly Ala Ala Gly Gly Val Glu Ala Val Tyr
 340 345 350
 Ser Ile Leu Ala Ile His Asp Gly Lys Ile Pro Pro Thr Ile Asn Ile
 355 360 365
 Phe Glu Gln Asp Val Glu Ala Gly Cys Asp Leu Asp Tyr Cys Ala Asn
 370 375 380
 Glu Ala Arg Asp Ala Glu Ile Asp Val Ala Ile Ser Asn Ser Phe Gly
 385 390 395 400
 Phe Gly Gly Thr Asn Gly Thr Leu Val Phe Lys Arg Phe Lys Gly
 405 410 415

<210> 36
 <211> 433
 <212> PRT
 <213> Neisseria meningitidis

<400> 36
 Met Ala Ile Tyr Gln Ser Gly Val Ile Phe Asp Gln Val Asp Thr Ala
 1 5 10 15
 Asn Pro Asp Cys Trp Thr Leu Asp Glu Tyr Val Lys Arg Gly Gly Tyr
 20 25 30
 Thr Ala Leu Arg Lys Ile Leu Ser Glu Asn Ile Ser Gln Thr Asp Val
 35 40 45
 Ile Asp Glu Val Lys Thr Ser Gly Leu Arg Gly Arg Gly Gly Ala Gly
 50 55 60
 Phe Pro Thr Gly Leu Lys Trp Ser Phe Met Pro Arg Ser Phe Pro Gly
 65 70 75 80
 Glu Lys Tyr Val Val Cys Asn Thr Asp Glu Gly Glu Pro Gly Thr Phe
 85 90 95
 Lys Asp Arg Asp Ile Ile Met Phe Asn Pro His Ala Leu Ile Glu Gly
 100 105 110
 Met Ile Ile Ala Gly Tyr Ala Met Gly Ala Lys Ala Gly Tyr Asn Tyr
 115 120 125
 Ile His Gly Glu Ile Phe Glu Gly Tyr Gln Arg Phe Glu Ala Ala Leu
 130 135 140
 Glu Gln Ala Arg Ala Ala Gly Phe Leu Gly Lys Asn Ile Leu Gly Ser
 145 150 155 160
 Asp Phe Glu Phe Glu Leu Phe Ala His His Gly Tyr Gly Ala Tyr Ile
 165 170 175
 Cys Gly Glu Glu Thr Ala Leu Leu Glu Ser Leu Glu Gly Lys Lys Gly
 180 185 190
 Gln Pro Arg Phe Lys Pro Pro Phe Pro Ala Ser Phe Gly Leu Tyr Gly
 195 200 205
 Lys Pro Thr Thr Ile Asn Asn Thr Glu Thr Phe Ser Ser Val Pro Phe
 210 215 220

Ile Ile Arg Asp Gly Gly Gln Ala Phe Ala ⁴⁸Asp Lys Gly Ile Pro Asn
 225 230 235 240
 Ala Gly Gly Thr Lys Leu Phe Cys Ile Ser Gly His Val Glu Arg Pro
 245 250 255
 Gly Asn Tyr Glu Val Pro Leu Gly Thr Pro Phe Ala Glu Val Leu Lys
 260 265 270
 Met Ala Gly Gly Met Arg Gly Gly Lys Lys Leu Lys Ala Val Ile Pro
 275 280 285
 Gly Gly Ser Ser Ala Pro Val Leu Pro Ala Asp Ile Met Met Gln Thr
 290 295 300
 Asn Met Asp Tyr Asp Ser Ile Ser Lys Ala Gly Ser Met Leu Gly Ser
 305 310 315 320
 Gly Ala Ile Ile Val Met Asp Glu Asp Val Cys Met Val Lys Ala Leu
 325 330 335
 Glu Arg Leu Ser Tyr Phe Tyr Tyr Asp Glu Ser Cys Gly Gln Cys Thr
 340 345 350
 Pro Cys Arg Glu Gly Thr Gly Trp Leu Tyr Arg Ile Val His Arg Ile
 355 360 365
 Val Glu Gly Lys Gly Lys Met Glu Asp Leu Asp Leu Leu Asp Ser Val
 370 375 380
 Gly Asn Gln Met Ala Gly Arg Thr Ile Cys Ala Leu Ala Asp Ala Ala
 385 390 395 400
 Val Phe Pro Val Arg Ser Phe Thr Lys His Phe Arg Asp Glu Phe Val
 405 410 415
 His Tyr Ile Glu His Gly Gly Pro Met Lys Glu His Lys Trp Gly Gly
 420 425 430

Trp

<210> 37
 <211> 204
 <212> PRT
 <213> Neisseria meningitidis

<400> 37
 Met Asn Phe Thr Arg Leu Leu Asn Gln Val Leu Ser Thr Val Gln Lys
 1 5 10 15
 Lys Gly Asn Thr Phe Ser Asp Ser Pro Leu Asn Ser Phe Gly Gly Gly
 20 25 30
 Ala Leu Val Ala Gly Val Ala Ser Met Leu Leu Asn Gly Lys Asn Arg
 35 40 45
 Lys Thr Ile Thr Lys Ile Gly Ser Thr Ala Ala Leu Gly Tyr Leu Ala
 50 55 60
 Tyr Arg Gly Tyr Gln Met Trp Gln Gln Asn Lys Gly Arg Ala Thr Val
 65 70 75 80
 Thr Gln Ser Asp Phe Gln Pro Ala Gly Glu Thr Glu Glu Thr Tyr Ser

				85				90		49			95		
Arg	Thr	Val	Leu 100	Arg	Thr	Met	Ile	Ala 105	Ala	Ala	Ala	Ser	Asp 110	Gly	Met
Ile	Asp	Glu 115	Ala	Glu	Arg	Arg	Thr 120	Ile	Glu	Gln	Glu	Ser 125	Gly	Thr	Asp
Pro	Glu 130	Thr	Ala	Ala	Trp	Leu 135	Ala	Ala	Glu	Tyr	Arg 140	Leu	Pro	Ala	Ser
Ile 145	Glu	Asp	Ile	Ala	Ala 150	Ala	Val	Gly	Asn	Asp 155	Glu	Ala	Leu	Ala	Ala 160
Glu	Ala	Tyr	Leu	Ala 165	Ala	Arg	Leu	Val	Cys 170	Ala	Asp	Leu	Ser	Arg 175	Lys
Glu	Thr	Val	Phe 180	Leu	Ala	Arg	Leu	Ser 185	Gln	Ala	Leu	Lys	Leu 190	Asp	Asp
Asn	Leu	Val 195	Glu	Ser	Leu	Glu	Arg 200	Gln	Leu	Gly	Phe				
<210>		38													
<211>		231													
<212>		PRT													
<213>		Neisseria meningitidis													
<400>		38													
Met 1	Lys	Leu	Lys	Thr 5	Leu	Ala	Leu	Thr	Ser 10	Leu	Thr	Leu	Leu	Ala 15	Leu
Ala	Ala	Cys	Ser 20	Lys	Gln	Ala	Glu	Thr 25	Ser	Val	Pro	Ala	Asp 30	Ser	Ala
Gln	Ser	Ser 35	Ser	Ser	Ala	Pro	Ala 40	Ala	Pro	Ala	Glu	Leu 45	Asn	Glu	Gly
Val	Asn 50	Tyr	Thr	Val	Leu	Ser 55	Thr	Pro	Ile	Pro	Gln 60	Gln	Gln	Ala	Gly
Lys 65	Ile	Glu	Val	Leu	Glu 70	Phe	Phe	Gly	Tyr	Phe 75	Cys	Pro	His	Cys	Ala 80
His	Leu	Glu	Pro	Val 85	Leu	Ser	Glu	His	Ile 90	Lys	Thr	Phe	Lys	Asp 95	Asp
Thr	Tyr	Met	Arg 100	Arg	Glu	His	Val	Val 105	Trp	Gly	Asp	Glu	Met 110	Lys	Pro
Leu	Ala	Arg 115	Leu	Ala	Ala	Ala	Val 120	Glu	Met	Ala	Gly	Glu 125	Ser	Asp	Lys
Ala	Asn 130	Ser	His	Ile	Phe	Asp 135	Ala	Met	Val	Asn	Gln 140	Lys	Ile	Asn	Leu
Ala 145	Asp	Thr	Asp	Thr	Leu 150	Lys	Lys	Trp	Leu	Ser 155	Glu	Gln	Thr	Ala	Phe 160
Asp	Gly	Lys	Lys	Val 165	Leu	Ala	Ala	Phe	Glu 170	Ala	Pro	Glu	Ser	Gln 175	Ala
Arg	Ala	Ala	Gln 180	Met	Glu	Glu	Leu	Thr 185	Asn	Lys	Phe	Gln	Ile 190	Ser	Gly

Thr Pro Thr Val Ile Val Gly Gly Lys Tyr Gln Val Glu Phe Lys Asp
195 200 205

Trp Gln Ser Gly Met Thr Thr Ile Asp Gln Leu Val Asp Lys Val Arg
210 215 220

Glu Glu Gln Lys Lys Pro Gln
225 230

<210> 39
<211> 558
<212> PRT
<213> Neisseria meningitidis

<400> 39
Met Ser Val Gly Leu Leu Arg Ile Leu Val Gln Asn Gln Val Val Thr
1 5 10 15

Val Glu Gln Ala Glu His Tyr Tyr Asn Glu Ser Gln Ala Gly Lys Glu
20 25 30

Val Leu Pro Met Leu Phe Ser Asp Gly Val Ile Ser Pro Lys Ser Leu
35 40 45

Ala Ala Leu Ile Ala Arg Val Phe Ser Tyr Ser Ile Leu Asp Leu Arg
50 55 60

His Tyr Pro Arg His Arg Val Leu Met Gly Val Leu Thr Glu Glu Gln
65 70 75 80

Met Val Glu Phe His Cys Val Pro Val Phe Arg Arg Gly Asp Lys Val
85 90 95

Phe Phe Ala Val Ser Asp Pro Thr Gln Met Pro Gln Ile Gln Lys Thr
100 105 110

Val Ser Ala Ala Gly Ile Glu Val Glu Leu Val Ile Val Glu Asp Asp
115 120 125

Gln Leu Ala Gly Leu Leu Asp Trp Val Gly Ser Arg Ser Thr Ser Leu
130 135 140

Leu Gln Glu Leu Gly Glu Gly Gln Glu Glu Glu Glu Ser His Thr Leu
145 150 155 160

Tyr Ile Asp Asn Glu Glu Ala Glu Asp Gly Pro Val Pro Arg Phe Ile
165 170 175

His Lys Thr Leu Ser Asp Ala Leu Arg Ser Gly Ala Ser Asp Ile His
180 185 190

Phe Glu Phe Tyr Glu His Asn Ala Arg Ile Arg Phe Arg Val Asp Gly
195 200 205

Gln Leu Arg Glu Val Val Gln Pro Pro Ile Ala Val Arg Gly Gln Leu
210 215 220

Ala Ser Arg Ile Lys Val Met Ser Arg Leu Asp Ile Ser Glu Lys Arg
225 230 235 240

Ile Pro Gln Asp Gly Arg Met Gln Leu Thr Phe Gln Lys Gly Gly Lys
245 250 255

Pro Val Asp Phe Arg Val Ser Thr Leu Pro Thr Leu Phe Gly Glu Lys
 260 265 51 270
 val val Met Arg Ile Leu Asn Ser Asp Ala Ala Ser Leu Asn Ile Asp
 275 280 285
 Gln Leu Gly Phe Glu Pro Phe Gln Lys Lys Leu Leu Leu Glu Ala Ile
 290 295 300
 His Arg Pro Tyr Gly Met Val Leu Val Thr Gly Pro Thr Gly Ser Gly
 305 310 315 320
 Lys Thr Val Ser Leu Tyr Thr Cys Leu Asn Ile Leu Asn Thr Glu Ser
 325 330 335
 Val Asn Ile Ala Thr Ala Glu Asp Pro Ala Glu Ile Asn Leu Pro Gly
 340 345 350
 Ile Asn Gln Val Asn Val Asn Asp Lys Gln Gly Leu Thr Phe Ala Ala
 355 360 365
 Ala Leu Lys Ser Phe Leu Arg Gln Asp Pro Asp Ile Ile Met Val Gly
 370 375 380
 Glu Ile Arg Asp Leu Glu Thr Ala Asp Ile Ala Ile Lys Ala Ala Gln
 385 390 395 400
 Thr Gly His Met Val Phe Ser Thr Leu His Thr Asn Asn Ala Pro Ala
 405 410 415
 Thr Leu Ser Arg Met Leu Asn Met Gly Val Ala Pro Phe Asn Ile Ala
 420 425 430
 Ser Ser Val Ser Leu Ile Met Ala Gln Arg Leu Leu Arg Arg Leu Cys
 435 440 445
 Ser Ser Cys Lys Gln Glu Val Glu Arg Pro Ser Ala Ser Ala Leu Lys
 450 455 460
 Glu Val Gly Phe Thr Asp Glu Asp Leu Ala Lys Asp Trp Lys Leu Tyr
 465 470 475 480
 Arg Ala Val Gly Cys Asp Arg Cys Arg Gly Gln Gly Tyr Lys Gly Arg
 485 490 495
 Ala Gly Val Tyr Glu Val Met Pro Ile Ser Glu Glu Met Gln Arg Val
 500 505 510
 Ile Met Asn Asn Gly Thr Glu Val Asp Ile Leu Asp Val Ala Tyr Lys
 515 520 525
 Glu Gly Met Val Asp Leu Arg Arg Ala Gly Ile Leu Lys Val Met Gln
 530 535 540
 Gly Ile Thr Ser Leu Glu Glu Val Thr Ala Asn Thr Asn Asp
 545 550 555

<210> 40
 <211> 273
 <212> PRT
 <213> Neisseria meningitidis

<400> 40
 Met Ser Leu Gln Asn Ile Ile Glu Thr Ala Phe Glu Asn Arg Ala Asp

Ala Glu Leu Ala Phe Thr Tyr Val Val Asp Lys Leu Glu Glu Arg Val
 35 40 45
 Arg Lys Met Ala Ala Glu Leu Asp Ser Glu Leu Val Phe Arg Cys Asp
 50 55 60
 Val Ala Ser Asp Asp Glu Ile Asn Gln Val Phe Ala Asp Leu Gly Lys
 65 70 75 80
 His Trp Asp Gly Leu Asp Gly Leu Val His Ser Ile Gly Phe Ala Pro
 85 90 95
 Lys Glu Ala Leu Ser Gly Asp Phe Leu Asp Ser Ile Ser Arg Glu Ala
 100 105 110
 Phe Asn Thr Ala His Glu Ile Ser Ala Tyr Ser Leu Pro Ala Leu Ala
 115 120 125
 Lys Ala Ala Arg Pro Met Met Arg Gly Arg Asn Ser Ala Ile Val Ala
 130 135 140
 Leu Ser Tyr Leu Gly Ala Val Arg Ala Ile Pro Asn Tyr Asn Val Met
 145 150 155 160
 Gly Met Ala Lys Ala Ser Leu Glu Ala Gly Ile Arg Phe Thr Ala Ala
 165 170 175
 Cys Leu Gly Lys Glu Gly Ile Arg Cys Asn Gly Ile Ser Ala Gly Pro
 180 185 190
 Ile Lys Thr Leu Ala Ala Ser Gly Ile Ala Asp Phe Gly Lys Leu Leu
 195 200 205
 Gly His Val Ala Ala His Asn Pro Leu Arg Arg Asn Val Thr Ile Glu
 210 215 220
 Glu Val Gly Asn Thr Ala Ala Phe Leu Leu Ser Asp Leu Ser Ser Gly
 225 230 235 240
 Ile Thr Gly Glu Ile Thr Tyr Val Asp Gly Gly Tyr Ser Ile Asn Ala
 245 250 255
 Leu Ser Thr Glu Gly
 260

<210> 42
 <211> 332
 <212> PRT
 <213> Neisseria meningitidis

<400> 42
 Met Ser Arg Pro Val Pro Ala Val Phe Gly Ser Val Phe His Ser Gln
 1 5 10 15
 Met Pro Val Leu Ala Tyr Arg Glu Gly Lys Trp Gln Pro Thr Glu Trp
 20 25 30
 Gln Ser Ser Gln Asp Leu Ser Leu Ala Pro Gly Ala His Ala Leu His
 35 40 45
 Tyr Gly Ser Glu Cys Phe Glu Gly Leu Lys Ala Phe Arg Gln Ala Asp
 50 55 60

Gly Lys Ile Val Leu Phe Arg Pro Thr Ala Asn⁵⁴ Ile Ala Arg Met Arg
 65 70 75 80
 Gln Ser Ala Asp Ile Leu His Leu Pro Arg Pro Glu Thr Glu Ala Tyr
 85 90 95
 Leu Asp Ala Leu Ile Lys Leu Val Lys Arg Ala Ala Asp Glu Ile Pro
 100 105 110
 Asp Ala Pro Ala Ala Leu Tyr Leu Arg Pro Thr Leu Ile Gly Thr Asp
 115 120 125
 Pro Val Ile Gly Lys Ala Gly Ser Pro Ser Glu Thr Ala Leu Leu Tyr
 130 135 140
 Ile Leu Ala Ser Pro Val Gly Asp Tyr Phe Lys Val Gly Ser Pro Val
 145 150 155 160
 Lys Ile Leu Val Glu Thr Glu His Ile Arg Cys Ala Pro His Met Gly
 165 170 175
 Arg Val Lys Cys Gly Gly Asn Tyr Ala Ser Ala Met His Trp Val Leu
 180 185 190
 Lys Ala Lys Ala Glu Tyr Gly Ala Asn Gln Val Leu Phe Cys Pro Asn
 195 200 205
 Gly Asp Val Gln Glu Thr Gly Ala Ser Asn Phe Ile Leu Ile Asn Gly
 210 215 220
 Asp Glu Ile Ile Thr Lys Pro Leu Thr Asp Glu Phe Leu His Gly Val
 225 230 235 240
 Thr Arg Asp Ser Val Leu Thr Val Ala Lys Asp Leu Gly Tyr Thr Val
 245 250 255
 Ser Glu Arg Asn Phe Thr Val Asp Glu Leu Lys Ala Ala Val Glu Asn
 260 265 270
 Gly Ala Glu Ala Ile Leu Thr Gly Thr Ala Ala Val Ile Ser Pro Val
 275 280 285
 Thr Ser Phe Val Ile Gly Gly Lys Glu Ile Glu Val Lys Ser Gln Glu
 290 295 300
 Arg Gly Tyr Ala Ile Arg Lys Ala Ile Thr Asp Ile Gln Tyr Gly Leu
 305 310 315 320
 Ala Glu Asp Lys Tyr Gly Trp Leu Val Glu Val Cys
 325 330

<210> 43
 <211> 351
 <212> PRT
 <213> Neisseria meningitidis

<400> 43
 Met Thr Ile Leu Ser Asp Val Lys Ala Leu Gly Gln Gln Ile Trp Leu
 1 5 10 15
 Asp Asn Leu Ser Arg Ser Leu Val Gln Ser Gly Glu Leu Ala Gln Met
 20 25 30
 Leu Lys Gln Gly Val Cys Gly Val Thr Ser Asn Pro Ala Ile Phe Gln

	35		40		55		45	
Lys	Ala	Phe	Ala	Gly	Asp	Ala	Leu	Tyr
50					55			Ala
								Asp
								Glu
								Ile
								Ala
								Ala
								Leu
Lys	Gln	Gln	Asn	Leu	Ser	Pro	Lys	Gln
65					70			Arg
								Tyr
								Glu
								Thr
								Met
								Ala
								Val
Ala	Asp	Val	Arg	Ala	Ala	Cys	Asp	Val
				85				Cys
								Leu
								Ala
								Glu
								His
								Glu
								Ser
Thr	Gly	Gly	Lys	Thr	Gly	Phe	Val	Ser
			100					Pro
								Glu
								Leu
Ser	Lys	Asp	Ala	Gln	Gly	Thr	Val	Glu
		115						Glu
								Ala
								Arg
								Arg
								Leu
								Tyr
								Ala
Ala	Ile	Gly	Cys	Lys	Asn	Ala	Met	Ile
130						135		Lys
								Val
								Pro
								Ala
								Thr
								Asp
								Ala
Gly	Ile	Asp	Ala	Leu	Glu	Thr	Leu	Val
145					150			Ser
								Asp
								Gly
								Ile
								Ser
								Val
								Asn
Leu	Thr	Leu	Leu	Phe	Ser	Arg	Ala	Gln
				165				Thr
								Leu
								Lys
								Ala
								Tyr
								Ala
								Ala
Tyr	Ala	Arg	Gly	Ile	Ala	Lys	Arg	Leu
			180					Ala
								Ala
								Gly
								Gln
								Ser
								Val
								Ala
His	Ile	Gln	Val	Val	Ala	Ser	Phe	Phe
								Ile
								Ser
								Arg
								Val
								Asp
								Gly
								Ala
Leu	Asp	Thr	Thr	Leu	Pro	Asp	His	Leu
210						215		Lys
								Gly
								Lys
								Ile
								Ala
								Ile
								Ala
Leu	Ala	Lys	Ala	Ala	Tyr	Gln	Asp	Trp
225					230			Ala
								Gln
								Tyr
								Phe
								Gly
								Ser
								Pro
Glu	Phe	Ala	Ala	Leu	Glu	Thr	Lys	Gly
				245				Ala
								Asn
								Arg
								Val
								Gln
								Leu
								Leu
Trp	Ala	Ser	Thr	Gly	Val	Lys	Asn	Pro
			260					Ala
								Tyr
								Pro
								Asp
								Thr
								Leu
								Tyr
Val	Asp	Ser	Leu	Ile	Gly	Ala	His	Thr
		275						Val
								Asn
								Thr
								Val
								Pro
								Asp
								Ala
Thr	Leu	Lys	Ala	Phe	Ile	Asp	His	Gly
290						295		Thr
								Ala
								Lys
								Ala
								Thr
								Leu
								Thr
Glu	Gly	Val	Glu	Glu	Ala	Gln	Ala	Gln
305					310			Leu
								Ala
								Glu
								Thr
								Ala
								Ala
								Leu
Gly	Ile	Asp	Val	Glu	Thr	Leu	Ala	Thr
				325				Arg
								Leu
								Gln
								Glu
								Asp
								Gly
								Leu
Lys	Gln	Phe	Glu	Glu	Ala	Phe	Glu	Lys
			340					Leu
								Leu
								Ala
								Pro
								Leu
								Ala

<210> 44
 <211> 472
 <212> PRT
 <213> Neisseria meningitidis

<400> 44
 Met Ser Ile Lys Asn Ala Val Lys Leu Ile Glu Glu Ser Glu Ala Arg
 1 5 10 15
 Phe Val Asp Leu Arg Phe Thr Asp Thr Lys Gly Lys Gln His His Phe
 20 25 30
 Thr Val Pro Ala Arg Ile Val Leu Glu Asp Pro Glu Glu Trp Phe Glu
 35 40 45
 Asn Gly Gln Ala Phe Asp Gly Ser Ser Ile Gly Gly Trp Lys Gly Ile
 50 55 60
 Gln Ala Ser Asp Met Gln Leu Arg Pro Asp Ala Ser Thr Ala Phe Val
 65 70 75 80
 Asp Pro Phe Tyr Asp Asp Ala Thr Val Val Leu Thr Cys Asp Val Ile
 85 90 95
 Asp Pro Ala Asp Gly Gln Gly Tyr Asp Arg Asp Pro Arg Ser Ile Ala
 100 105 110
 Arg Arg Ala Glu Ala Tyr Leu Lys Ser Ser Gly Ile Gly Glu Thr Ala
 115 120 125
 Tyr Phe Gly Pro Glu Pro Glu Phe Phe Val Phe Asp Gly Ile Glu Phe
 130 135 140
 Glu Thr Asp Met His Lys Thr Arg Tyr Glu Ile Thr Ser Glu Ser Gly
 145 150 155 160
 Ala Trp Ala Ser Gly Leu His Met Asp Gly Gln Asn Thr Gly His Arg
 165 170 175
 Pro Thr Val Lys Gly Gly Tyr Ala Pro Val Ala Pro Ile Asp Cys Gly
 180 185 190
 Gln Asp Leu Arg Ser Ala Met Val Asn Ile Leu Glu Glu Leu Gly Ile
 195 200 205
 Glu Val Glu Val His His Ser Glu Val Gly Thr Gly Ser Gln Met Glu
 210 215 220
 Ile Gly Thr Arg Phe Ala Thr Leu Val Lys Arg Ala Asp Gln Thr Gln
 225 230 235 240
 Asp Met Lys Tyr Val Ile Gln Asn Val Ala His Asn Phe Gly Lys Thr
 245 250 255
 Ala Thr Phe Met Pro Lys Pro Ile Met Gly Asp Asn Gly Ser Gly Met
 260 265 270
 His Val His Gln Ser Ile Trp Lys Asp Gly Gln Asn Leu Phe Ala Gly
 275 280 285
 Asp Gly Tyr Ala Gly Leu Ser Asp Thr Ala Leu Tyr Tyr Ile Gly Gly
 290 295 300
 Ile Ile Lys His Ala Lys Ala Leu Asn Ala Ile Thr Asn Pro Ser Thr
 305 310 315 320
 Asn Ser Tyr Lys Arg Leu Val Pro His Phe Glu Ala Pro Thr Lys Leu
 325 330 335

Ala Tyr Ser Ala Lys Asn Arg Ser Ala Ser Ile Arg Ile Pro Ser Val
 340 345 350
 Asn Ser Ser Lys Ala Arg Arg Ile Glu Ala Arg Phe Pro Asp Pro Thr
 355 360 365
 Ala Asn Pro Tyr Leu Ala Phe Ala Ala Leu Leu Met Ala Gly Leu Asp
 370 375 380
 Gly Ile Gln Asn Lys Ile His Pro Gly Asp Pro Ala Asp Lys Asn Leu
 385 390 395 400
 Tyr Asp Leu Pro Pro Glu Glu Asp Ala Leu Val Pro Thr Val Cys Ala
 405 410 415
 Ser Leu Glu Glu Ala Leu Ala Ala Leu Lys Ala Asp His Glu Phe Leu
 420 425 430
 Leu Arg Gly Gly Val Phe Ser Lys Asp Trp Ile Asp Ser Tyr Ile Ala
 435 440 445
 Phe Lys Glu Glu Asp Val Arg Arg Ile Arg Met Ala Pro His Pro Leu
 450 455 460
 Glu Phe Glu Met Tyr Tyr Ser Leu
 465 470

<210> 45
 <211> 242
 <212> PRT
 <213> Neisseria meningitidis

<400> 45
 Met Thr Lys Gln Leu Lys Leu Ser Ala Leu Phe Val Ala Leu Leu Ala
 1 5 10 15
 Ser Gly Thr Ala Val Ala Gly Glu Ala Ser Val Gln Gly Tyr Thr Val
 20 25 30
 Ser Gly Gln Ser Asn Glu Ile Val Arg Asn Asn Tyr Gly Glu Cys Trp
 35 40 45
 Lys Asn Ala Tyr Phe Asp Lys Ala Ser Gln Gly Arg Val Glu Cys Gly
 50 55 60
 Asp Ala Val Ala Ala Pro Glu Pro Glu Pro Glu Pro Glu Pro Ala Pro
 65 70 75 80
 Ala Pro Val Val Val Val Glu Gln Ala Pro Gln Tyr Val Asp Glu Thr
 85 90 95
 Ile Ser Leu Ser Ala Lys Thr Leu Phe Gly Phe Asp Lys Asp Ser Leu
 100 105 110
 Arg Ala Glu Ala Gln Asp Asn Leu Lys Val Leu Ala Gln Arg Leu Ser
 115 120 125
 Arg Thr Asn Val Gln Ser Val Arg Val Glu Gly His Thr Asp Phe Met
 130 135 140
 Gly Ser Asp Lys Tyr Asn Gln Ala Leu Ser Glu Arg Arg Ala Tyr Val
 145 150 155 160
 Val Ala Asn Asn Leu Val Ser Asn Gly Val Pro Val Ser Arg Ile Ser

165 58 170 175
 Ala Val Gly Leu Gly Glu Ser Gln Ala Gln Met Thr Gln Val Cys Glu
 180 185 190
 Ala Glu Val Ala Lys Leu Gly Ala Lys Val Ser Lys Ala Lys Lys Arg
 195 200 205
 Glu Ala Leu Ile Ala Cys Ile Glu Pro Asp Arg Arg Val Asp Val Lys
 210 215 220
 Ile Arg Ser Ile Val Thr Arg Gln Val Val Pro Ala His Asn His His
 225 230 235 240
 Gln His

<210> 46
 <211> 752
 <212> PRT
 <213> Neisseria meningitidis

<400> 46
 Met Tyr Thr Arg Ile Met Glu Ile Ser Pro Trp Thr Leu Arg Ser Ala
 1 5 10 15
 Lys Leu Glu Lys Glu His Lys Arg Leu Gln Glu Ser Leu Thr Ser Leu
 20 25 30
 Gly Asn Gly Tyr Met Gly Met Arg Gly Ser Phe Glu Glu Thr Tyr Ser
 35 40 45
 Ala Asp Ser His Leu Gly Thr Tyr Ile Ala Gly Val Trp Phe Pro Asp
 50 55 60
 Lys Thr Arg Val Gly Trp Trp Lys Asn Gly Tyr Pro Lys Tyr Phe Gly
 65 70 75 80
 Lys Ala Ile Asn Ala Phe Asn Phe Ser Lys Val Lys Ile Phe Val Asp
 85 90 95
 Gly Gln Glu Val Asp Leu Ala Lys Asn Asp Val Ala Gly Phe Ser Val
 100 105 110
 Glu Leu Asp Met Gln His Gly Val Leu Arg Arg Ser Phe Thr Val Phe
 115 120 125
 Gly Val Arg Phe Asn Val Cys Lys Phe Leu Ser Val Ala Gln Lys Glu
 130 135 140
 Leu Ala Val Ile Arg Trp Glu Ala Val Ser Val Asp Gly Lys Thr His
 145 150 155 160
 Gln Val Arg Ile Asp Ser Ile Ile Asp Ala Asp Val Lys Asn Glu Asp
 165 170 175
 Ser Asn Tyr Glu Glu Lys Phe Trp Gln Val Leu Asp Lys Gly Val Ser
 180 185 190
 Asp Ser Leu Ser Tyr Ile Ala Ala Gln Thr Val Ala Asn Pro Phe Gly
 195 200 205
 Val Glu Gln Phe Ile Val Asn Ala Glu Gln Thr Phe Ala Gly Ser Phe
 210 215 220

Lys Ala Leu Gly Gly Ser Gln Thr Asp Trp Gln Val Ser Asn Ser Phe
 225 230 235 240
 Glu Ser Glu Val Gly Ser Thr Pro Glu Thr Phe Glu Lys Arg Val Ile
 245 250 255
 Val Thr Thr Ser Arg Asp Tyr Gln Ser Leu Glu Ala Val Lys Ala Ala
 260 265 270
 Gly Arg Ala Leu Ser Glu Lys Ile Ala Gly Val Ala Phe Glu Thr Leu
 275 280 285
 Leu Asp Ala His Lys Ala Gly Trp Leu His Arg Trp Glu Ile Ala Asp
 290 295 300
 Val Val Ile Glu Gly Ser Asp Glu Ala Gln Gln Gly Ile Arg Phe Asn
 305 310 315 320
 Leu Phe Gln Leu Phe Ser Thr Tyr Tyr Gly Glu Asp Ala Arg Leu Asn
 325 330 335
 Ile Gly Pro Lys Gly Phe Thr Gly Glu Lys Tyr Gly Gly Ala Thr Tyr
 340 345 350
 Trp Asp Thr Glu Ala Tyr Ala Val Pro Leu Tyr Leu Ala Leu Ala Glu
 355 360 365
 Pro Glu Val Thr Arg Asn Leu Leu Gln Tyr Arg Arg Asn Gln Leu Pro
 370 375 380
 Gln Ala Gln His Asn Ala Arg Glu Gln Gly Leu Ala Gly Ala Leu Tyr
 385 390 395 400
 Pro Met Val Thr Phe Thr Gly Ile Glu Cys His Asn Glu Trp Glu Ile
 405 410 415
 Thr Phe Glu Glu Ile His Arg Asn Gly Ala Ile Pro Tyr Ala Ile Tyr
 420 425 430
 Asn Tyr Thr Asn Tyr Thr Gly Asp Glu Gly Tyr Leu Ala Lys Glu Gly
 435 440 445
 Leu Glu Val Leu Val Glu Val Ser Arg Phe Trp Ala Asp Arg Val His
 450 455 460
 Phe Ser Lys Arg Asn Gly Lys Tyr Met Ile His Gly Val Thr Gly Pro
 465 470 475 480
 Asn Glu Tyr Glu Asn Asn Ile Asn Asn Asn Trp Tyr Thr Asn Thr Leu
 485 490 495
 Ala Ala Trp Val Leu Asp Tyr Thr Arg Glu Ala Leu Ala Lys Tyr Pro
 500 505 510
 Arg Pro Asp Leu Asn Val Arg Ala Asp Glu Leu Glu Lys Trp Ala Asp
 515 520 525
 Ile Ser Ala Asn Met Tyr Arg Pro His Asp Glu Glu Leu Gly Val Phe
 530 535 540
 Val Gln His Asp Gly Phe Leu Asp Lys Asp Ile Arg Pro Val Ser Ala
 545 550 555 560

60

Leu Ser Pro Asp Asp₅₆₅ Leu Pro Leu Asn Gln₅₇₀ Lys Trp Ser Trp Asp₅₇₅ Lys
 Ile Leu Arg Ser₅₈₀ Pro Phe Ile Lys Gln₅₈₅ Ala Asp Val Leu Gln₅₉₀ Gly Ile
 Tyr Phe Phe₅₉₅ Ser Asp Arg Phe Asn₆₀₀ Ile Asp Glu Lys Arg₆₀₅ Arg Asn Phe
 Asp Phe₆₁₀ Tyr Glu Pro Met Thr₆₁₅ Val His Glu Ser Ser₆₂₀ Leu Ser Pro Cys
 Ile His Ser Ile Leu Ala₆₃₀ Ala Glu Leu Gly Lys₆₃₅ Glu Glu Lys Ala Val₆₄₀
 Glu Met Tyr Gln Arg₆₄₅ Thr Ala Arg Leu Asp₆₅₀ Leu Asp Asn Tyr Asn₆₅₅ Asn
 Asp Thr Glu Asp₆₆₀ Gly Leu His Ile Thr₆₆₅ Ser Met Thr Gly Ser₆₇₀ Trp Leu
 Ala Ile Val₆₇₅ Gln Gly Phe Ala Gln₆₈₀ Met Lys Thr Trp Gly₆₈₅ Gly Lys Leu
 Ser Phe₆₉₀ Ala Pro Phe Leu Pro₆₉₅ Ser Ala Trp Thr Gly₇₀₀ Tyr Ala Phe His
 Ile Asn Tyr Arg Gly Arg₇₁₀ Leu Ile Lys Val Ala₇₁₅ Val Gly Lys Glu Asn₇₂₀
 Val Val Phe Thr Leu₇₂₅ Leu Lys Gly Glu Ser₇₃₀ Leu Asp Leu Gln Val₇₃₅ Tyr
 Gly Lys Asp Ile₇₄₀ Thr Leu Asp Gly Ser₇₄₅ His Thr Val Ala Leu₇₅₀ Glu Lys

<210> 47
 <211> 221
 <212> PRT
 <213> Neisseria meningitidis

<400> 47
 Met Thr Phe Thr Ala₅ Val Leu Phe Asp₁₀ Leu Asp Gly Val Ile Thr Asp₁₅
 Thr Ala Glu Tyr₂₀ His Tyr Arg Ala Trp₂₅ Lys Lys Leu Ala Glu₃₀ Glu Leu
 Gly Ile Ser₃₅ Ile Asp Arg Lys Phe₄₀ Asn Glu Gln Leu Lys₄₅ Gly Val Ser
 Arg Asp₅₀ Asp Ser Leu Lys Arg₅₅ Ile Leu Ala His Gly₆₀ Gly Lys Thr Val
 Ser Glu Ala Glu Phe Ala₇₀ Glu Leu Thr Arg Arg₇₅ Lys Asn Asp Asn Tyr₈₀
 Val Glu Met Ile Gln₈₅ Ala Val Lys Pro Glu₉₀ Asp Val Tyr Pro Gly₉₅ Ile
 Leu Pro Leu Leu₁₀₀ Glu Ala Leu Arg Ala₁₀₅ Asn Gly Lys Lys Ile₁₁₀ Ala Leu

Ala Ser Ala Ser Lys Asn Gly Pro Phe Leu Leu⁶¹ Glu Arg Met Gly Leu
 115 120 125
 Thr His Phe Phe Asp Ala Ile Ala Asp Pro Ala Ala Val Ala His Ser
 130 135 140
 Lys Pro Ala Pro Asp Ile Phe Leu Ala Ala Ala Glu Gly Val Asp Ala
 145 150 155 160
 Asp Ile Arg Gln Cys Ile Gly Ile Glu Asp Ala Ala Ala Gly Val Ala
 165 170 175
 Ala Ile Lys Ala Ala Gly Ala Leu Pro Ile Gly Val Gly Lys Ala Glu
 180 185 190
 Asp Leu Gly Ser Asp Ile Ala Leu Val Ser Gly Thr Ala Glu Leu Thr
 195 200 205
 Tyr Ala Tyr Leu Gln Ser Val Trp Glu Gln Ser Gly Arg
 210 215 220

<210> 48
 <211> 414
 <212> PRT
 <213> Neisseria meningitidis

<400> 48
 Met Glu Gln Gln Gln Arg Tyr Ile Ser Val Leu Asp Ile Gly Thr Ser
 1 5 10 15
 Lys Val Leu Ala Leu Ile Gly Glu Val Gln Asp Asp Asp Lys Ile Asn
 20 25 30
 Ile Val Gly Leu Gly Gln Ala Pro Ser Arg Gly Leu Arg Ala Gly Met
 35 40 45
 Val Thr Asn Ile Asp Ala Thr Val Gln Ala Ile Arg Gln Ala Val Asn
 50 55 60
 Asp Ala Glu Leu Met Ala Asp Thr Lys Ile Thr His Val Thr Thr Gly
 65 70 75 80
 Ile Ala Gly Asn His Ile Arg Ser Leu Asn Ser Gln Gly Val Val Lys
 85 90 95
 Ile Lys Asp Gly Glu Val Thr Gln Ala Asp Ile Asp Arg Ala Ile Glu
 100 105 110
 Thr Ala Lys Ala Ile Asn Ile Pro Pro Asp Gln Lys Ile Leu Asp Ala
 115 120 125
 Val Val Gln Asp Tyr Ile Ile Asp Thr Gln Leu Gly Val Arg Glu Pro
 130 135 140
 Ile Gly Met Ser Gly Val Arg Leu Asp Thr Arg Val His Ile Ile Thr
 145 150 155 160
 Gly Ala Ser Thr Ala Val Gln Asn Val Gln Lys Cys Ile Glu Arg Cys
 165 170 175
 Gly Leu Lys Ser Asp Gln Ile Met Leu Gln Pro Leu Ala Ser Gly Gln
 180 185 190
 Ala Val Leu Thr Glu Asp Glu Lys Asp Leu Gly Val Cys Val Ile Asp

195 200 205
 Ile Gly Gly Gly Thr Thr Asp Ile Ala Val Tyr Met Asn Gly Ala Ile
 210 215 220
 Arg His Thr Ser Val Ile Pro Ala Gly Gly Asn Leu Ile Thr Lys Asp
 225 230 235 240
 Leu Ser Lys Ser Leu Arg Thr Pro Leu Asp Ala Ala Glu Tyr Ile Lys
 245 250 255
 Ile His Tyr Gly Val Ala Ser Cys Asp Thr Glu Gly Leu Gly Glu Met
 260 265 270
 Ile Glu Val Pro Gly Val Gly Asp Arg Thr Ser Arg Gln Val Ser Ser
 275 280 285
 Lys Val Leu Ala Ala Ile Ile Ser Ala Arg Ile Gln Glu Ile Phe Gly
 290 295 300
 Val Val Leu Gly Glu Leu Gln Lys Ser Gly Phe Pro Lys Glu Val Leu
 305 310 315 320
 Asn Ala Gly Ile Val Leu Thr Gly Gly Val Ser Met Met Thr Gly Ile
 325 330 335
 Val Glu Phe Ala Glu Lys Ile Phe Asp Leu Pro Val Arg Thr Gly Ala
 340 345 350
 Pro Gln Glu Met Gly Gly Leu Ser Asp Arg Val Arg Thr Pro Arg Phe
 355 360 365
 Ser Thr Ala Ile Gly Leu Leu His Ala Ala Cys Lys Leu Glu Gly Asn
 370 375 380
 Leu Pro Gln Pro Glu Asn Gly Ala Val Gln Glu Arg Glu Gly Gly Gly
 385 390 395 400
 Gly Leu Leu Ala Arg Leu Lys Arg Trp Ile Glu Asn Ser Phe
 405 410

<210> 49
 <211> 392
 <212> PRT
 <213> Neisseria meningitidis

<400> 49
 Met Glu Phe Val Tyr Asp Val Ala Glu Ser Ala Val Ser Pro Ala Val
 1 5 10 15
 Ile Lys Val Ile Gly Leu Gly Gly Gly Gly Cys Asn Ala Ile Asn Asn
 20 25 30
 Met Val Ala Asn Asn Val Arg Gly Val Glu Phe Ile Ser Ala Asn Thr
 35 40 45
 Asp Ala Gln Ser Leu Ala Lys Asn His Ala Ala Lys Arg Ile Gln Leu
 50 55 60
 Gly Thr Asn Leu Thr Arg Gly Leu Gly Ala Gly Ala Asn Pro Asp Ile
 65 70 75 80
 Gly Arg Ala Ala Ala Gln Glu Asp Arg Glu Ala Ile Glu Glu Ala Ile
 85 90 95

Arg Gly Ala Asn Met Leu Phe Ile Thr Thr Gly Met Gly Gly Gly Thr
 100 105 110
 Gly Thr Gly Ser Ala Pro Val Val Ala Glu Ile Ala Lys Ser Leu Gly
 115 120 125
 Ile Leu Thr Val Ala Val Val Thr Arg Pro Phe Ala Tyr Glu Gly Lys
 130 135 140
 Arg Val His Val Ala Gln Ala Gly Leu Glu Gln Leu Lys Glu His Val
 145 150 155 160
 Asp Ser Leu Ile Ile Ile Pro Asn Asp Lys Leu Met Thr Ala Leu Gly
 165 170 175
 Glu Asp Val Thr Met Arg Glu Ala Phe Arg Ala Ala Asp Asn Val Leu
 180 185 190
 Arg Asp Ala Val Ala Gly Ile Ser Glu Val Val Thr Cys Pro Ser Glu
 195 200 205
 Ile Ile Asn Leu Asp Phe Ala Asp Val Lys Thr Val Met Ser Asn Arg
 210 215 220
 Gly Ile Ala Met Met Gly Ser Gly Tyr Ala Gln Gly Ile Asp Arg Ala
 225 230 235 240
 Arg Met Ala Thr Asp Gln Ala Ile Ser Ser Pro Leu Leu Asp Asp Val
 245 250 255
 Thr Leu Asp Gly Ala Arg Gly Val Leu Val Asn Ile Thr Thr Ala Pro
 260 265 270
 Gly Cys Leu Lys Met Ser Glu Leu Ser Glu Val Met Lys Ile Val Asn
 275 280 285
 Gln Ser Ala His Pro Asp Leu Glu Cys Lys Phe Gly Ala Ala Glu Asp
 290 295 300
 Glu Thr Met Ser Glu Asp Ala Ile Arg Ile Thr Ile Ile Ala Thr Gly
 305 310 315 320
 Leu Lys Glu Lys Gly Ala Val Asp Phe Val Pro Ala Arg Glu Val Glu
 325 330 335
 Ala Val Ala Pro Ser Lys Gln Glu Gln Ser His Asn Val Glu Gly Met
 340 345 350
 Ile Arg Thr Asn Arg Gly Ile Arg Thr Met Asn Leu Thr Ala Ala Asp
 355 360 365
 Phe Asp Asn Gln Ser Val Leu Asp Asp Phe Glu Ile Pro Ala Ile Leu
 370 375 380
 Arg Arg Gln His Asn Ser Asp Lys
 385 390

<210> 50
 <211> 362
 <212> PRT
 <213> *Neisseria meningitidis*
 <400> 50

Met Ser Gln Thr Ile Asp Glu Leu Leu Leu Pro His Arg Asn Ala Ile
 1 5 10 64
 Asp Thr Ile Asp Ala Glu Ile Leu Arg Leu Leu Asn Glu Arg Ala Gln
 20 25 30
 His Ala His Ala Ile Gly Glu Leu Lys Gly Thr Gly Ala Val Tyr Arg
 35 40 45
 Pro Glu Arg Glu Val Ala Val Leu Arg Arg Ile Gln Asp Leu Asn Lys
 50 55 60
 Gly Pro Leu Pro Asp Glu Ser Val Ala Arg Leu Phe Arg Glu Val Met
 65 70 75 80
 Ser Glu Cys Leu Ala Val Glu Arg Pro Leu Thr Ile Ala Tyr Leu Gly
 85 90 95
 Pro Gln Gly Thr Phe Thr Gln Gln Ala Ala Ile Lys His Phe Gly His
 100 105 110
 Ala Ala His Thr Met Ala Cys Pro Thr Ile Asp Asp Cys Phe Lys Gln
 115 120 125
 Val Glu Thr Arg Gln Ala Asp Tyr Leu Val Ala Pro Val Glu Asn Ser
 130 135 140
 Thr Glu Gly Ser Val Gly Arg Thr Leu Asp Leu Leu Ala Val Thr Ala
 145 150 155 160
 Leu Gln Ala Cys Gly Glu Ile Val Leu Arg Ile His His Asn Leu Leu
 165 170 175
 Arg Lys Asn Asn Gly Ser Thr Glu Gly Ile Ala Lys Val Phe Ser His
 180 185 190
 Ala Gln Ala Leu Ala Gln Cys Asn Asp Trp Leu Gly Arg His Leu Pro
 195 200 205
 Asn Ala Glu Arg Ile Ala Val Ser Ser Asn Ala Glu Ala Ala Arg Leu
 210 215 220
 Val Ala Glu Ser Asp Asp Gly Thr Val Ala Ala Ile Ala Gly Arg Thr
 225 230 235 240
 Ala Ala Glu Ile Tyr Gly Leu Asp Met Val Ala Glu Cys Ile Glu Asp
 245 250 255
 Glu Pro Asn Asn Thr Thr Arg Phe Leu Val Met Gly His His Glu Thr
 260 265 270
 Gly Ala Ser Gly Ser Asp Lys Thr Ser Leu Ala Val Ser Ala Pro Asn
 275 280 285
 Arg Ala Gly Ala Val Ala Ser Leu Leu Gln Pro Leu Thr Glu Ser Gly
 290 295 300
 Ile Ser Met Thr Lys Phe Glu Ser Arg Pro Ser Lys Ser Val Leu Trp
 305 310 315 320
 Glu Tyr Leu Phe Phe Ile Asp Ile Glu Gly His Arg Arg Asp Ala Gln
 325 330 335
 Ile Gln Thr Ala Leu Glu Arg Leu Gly Glu Arg Ala Ser Phe Val Lys

340 345 65 350
 Val Ile Gly Ser Tyr Pro Thr Ala Val Leu
 355 360
 <210> 51
 <211> 459
 <212> PRT
 <213> Neisseria meningitidis
 <400> 51
 Met Gln Ala Phe Ser Leu Tyr Pro Pro Val Gly His Pro Asp Ser Ala
 1 5 10 15
 Lys Lys Arg Gln Asn Arg Ala Asp Val Phe Leu Pro Phe Trp Lys Gln
 20 25 30
 Asp Asn Phe Leu Gly Lys Ser Val Gln Tyr Arg Phe Glu Phe Ala Gln
 35 40 45
 Ile Tyr Phe Thr Met Pro Lys Pro Cys Ala Gly Val Thr Met Gly Arg
 50 55 60
 Gly Asp Phe Phe Phe Ser Asn Leu Phe His Gln Glu Ser Ala Arg Met
 65 70 75 80
 Lys Lys Ser Val Leu Ala Val Leu Ala Ala Leu Ser Leu Ala Ala Cys
 85 90 95
 Gly Gly Ser Glu Lys Asn Ala Val Gln Pro Gln Ala Asp Ala Ala Ser
 100 105 110
 Ala Ala Asn Ala Glu Ala Ala Ala Thr Asp Thr Leu Asn Ile Tyr Asn
 115 120 125
 Trp Ser Asn Tyr Val Asp Glu Ser Thr Val Glu Asp Phe Lys Lys Ala
 130 135 140
 Asn Asn Leu Lys Leu Thr Tyr Asp Leu Tyr Glu Asn Asn Glu Thr Leu
 145 150 155 160
 Glu Ala Lys Met Leu Thr Gly Lys Ser Gly Tyr Asp Leu Val Val Pro
 165 170 175
 Gly Ile Ala Phe Leu Pro Arg Gln Ile Glu Ala Gly Ala Tyr Gln Lys
 180 185 190
 Val Asn Lys Asp Leu Ile Pro Asn Tyr Lys Asn Ile Asp Pro Glu Leu
 195 200 205
 Leu Lys Met Leu Glu Thr Ala Asp Pro Gly Asn Gln Tyr Ala Val Pro
 210 215 220
 Tyr Phe Ser Gly Val Asn Thr Ile Ala Ile Thr Ala Lys Gly Lys Glu
 225 230 235 240
 Leu Leu Gly Gly Lys Leu Pro Glu Asn Gly Trp Asp Leu Leu Phe Lys
 245 250 255
 Pro Glu Tyr Thr His Lys Leu Lys Ser Cys Gly Ile Ala Leu Trp Asp
 260 265 270
 Thr Pro Ser Glu Met Phe Pro Ile Leu Leu Asn Tyr Leu Gly Lys Asp
 275 280 285

Pro Lys Gly Ser Asn Pro Glu Asp Leu Lys Ala Ala Ala Glu Val Leu
 290 295 300
 Lys Ser Ile Arg Pro Asp Val Lys Arg Phe Ser Pro Ser Ile Ile Asp
 305 310 315 320
 Glu Leu Ala Arg Gly Asp Ile Cys Leu Ala Ala Gly Asn Gly Gly Asp
 325 330 335
 Leu Asn Leu Ala Lys Ala Arg Ser Glu Glu Val Lys Asn Asn Val Gly
 340 345 350
 Ile Glu Val Leu Thr Pro Lys Gly Met Gly Phe Trp Ile Glu Ser Trp
 355 360 365
 Leu Ile Pro Ala Asp Ala Lys Asn Val Ala Asn Ala His Lys Tyr Ile
 370 375 380
 Asn Tyr Thr Leu Asp Pro Glu Ile Ala Ala Lys Asn Gly Ile Ala Val
 385 390 395 400
 Thr Phe Ala Pro Ala Ser Lys Pro Ala Arg Glu Lys Met Pro Ala Glu
 405 410 415
 Leu Val Asn Thr Arg Ser Ile Phe Pro Asn Glu Gln Asp Met Lys Asp
 420 425 430
 Gly Phe Val Met Pro Gln Met Ser Thr Asp Ala Lys Lys Leu Ser Val
 435 440 445
 Ser Leu Trp Gln Lys Ile Lys Val Gly Thr Asn
 450 455

<210> 52
 <211> 602
 <212> PRT
 <213> Neisseria meningitidis

<400> 52
 Met Arg Thr Asn Tyr Cys Gly Leu Ile Ser Glu Gln Tyr Leu Asp Gln
 1 5 10 15
 Thr Val Thr Val Lys Gly Trp Val His Arg Arg Arg Asp His Gly Gly
 20 25 30
 Val Ile Phe Ile Asp Leu Arg Asp Arg Glu Gly Ile Val Gln Val Val
 35 40 45
 Ile Asp Pro Asp Thr Pro Glu Ala Phe Ala Ala Ala Asp Ser Ser Arg
 50 55 60
 Asn Glu Tyr Val Leu Ser Ile Thr Gly Arg Val Arg Asn Arg Pro Glu
 65 70 75 80
 Gly Thr Thr Asn Asp Lys Met Ile Ser Gly Lys Ile Glu Ile Leu Ala
 85 90 95
 Lys Glu Ile Glu Val Leu Asn Ala Ala Ala Thr Pro Pro Phe Gln Ile
 100 105 110
 Asp Asp Glu Asn Ile Ser Glu Asn Val Arg Leu Thr Asn Arg Val Ile
 115 120 125

67

Asp	Leu	Arg	Arg	Pro	Val	Met	Gln	Arg	Asn	Leu	Arg	Leu	Arg	Tyr	Gln
130						135					140				
Val	Ala	Met	Gly	Val	Arg	Arg	Tyr	Leu	Asp	Ala	Gln	Gly	Phe	Ile	Asp
145					150					155					160
Ile	Glu	Thr	Pro	Met	Leu	Thr	Arg	Ser	Thr	Pro	Glu	Gly	Ala	Arg	Asp
				165					170					175	
Tyr	Leu	Val	Pro	Ser	Arg	Val	His	Pro	Gly	Glu	Phe	Phe	Ala	Leu	Pro
			180					185					190		
Gln	Ser	Pro	Gln	Leu	Phe	Lys	Gln	Leu	Leu	Met	Val	Ala	Gly	Phe	Asp
		195					200					205			
Arg	Tyr	Tyr	Gln	Ile	Thr	Lys	Cys	Phe	Arg	Asp	Glu	Asp	Leu	Arg	Ala
	210					215					220				
Asp	Arg	Gln	Pro	Glu	Phe	Thr	Gln	Ile	Asp	Leu	Glu	Thr	Ser	Phe	Leu
225					230					235					240
Asn	Glu	Asp	Glu	Ile	Met	Asp	Ile	Thr	Glu	Gly	Met	Ala	Lys	Gln	Val
				245					250					255	
Phe	Lys	Asp	Ala	Leu	Asn	Val	Asp	Leu	Gly	Asp	Phe	Pro	Arg	Met	Pro
			260					265					270		
Tyr	Ser	Glu	Ala	Met	Phe	Tyr	Tyr	Gly	Ser	Asp	Lys	Pro	Asp	Met	Arg
		275					280					285			
Ile	Asn	Leu	Lys	Phe	Thr	Glu	Leu	Thr	Asp	Leu	Met	Lys	Thr	Glu	Glu
	290					295					300				
Phe	Lys	Val	Phe	Arg	Gly	Ala	Ala	Asp	Met	Lys	Gly	Gly	Arg	Val	Val
305					310					315					320
Ala	Leu	Arg	Val	Pro	Asn	Gly	Ala	Glu	Phe	Ser	Arg	Lys	Glu	Ile	Asp
				325					330					335	
Glu	Tyr	Thr	Lys	Phe	Val	Gly	Ile	Tyr	Gly	Ala	Lys	Gly	Leu	Ala	Tyr
			340					345					350		
Ile	Lys	Val	Asn	Asp	Val	Ser	Asn	Leu	Ser	Asn	Gly	Glu	Asp	Ser	Gly
		355					360					365			
Leu	Gln	Ser	Pro	Ile	Val	Lys	Tyr	Leu	Ser	Glu	Asn	Ala	Leu	Lys	Glu
	370					375					380				
Ile	Ile	Ala	Arg	Thr	Gly	Ala	Gln	Asn	Gly	Asp	Ile	Ile	Phe	Phe	Gly
385					390					395					400
Ala	Asp	Lys	Ala	Lys	Val	Val	Asn	Glu	Ala	Ile	Gly	Ala	Leu	Arg	Ile
				405					410					415	
Lys	Val	Gly	Leu	Glu	His	Gly	Lys	Asp	Asn	Gly	Tyr	Phe	Thr	Asp	Glu
			420					425					430		
Trp	Lys	Pro	Leu	Trp	Val	Val	Asp	Phe	Pro	Met	Phe	Glu	Tyr	Asp	Glu
		435					440					445			
Glu	Ala	Asp	Arg	Tyr	Val	Ala	Val	His	His	Pro	Phe	Thr	Ala	Pro	Lys
	450					455					460				
Glu	Gly	His	Glu	Asp	Leu	Met	Val	Ser	Asp	Pro	Ala	Asn	Cys	Leu	Ala

Glu Val

<210> 54
 <211> 361
 <212> PRT
 <213> Neisseria meningitidis

<400> 54
 Met Thr Val Pro His Ile Pro Arg Gly Pro Val Met Ala Asp Ile Ala
 1 5 10 15
 Ala Phe Arg Leu Thr Glu Glu Glu Lys Gln Arg Leu Leu Asp Pro Ala
 20 25 30
 Val Gly Gly Ile Ile Leu Phe Arg Asn Phe Gln Asn Ile Glu Gln
 35 40 45
 Leu Lys Thr Leu Thr Ala Glu Ile Lys Ala Leu Arg Thr Pro Glu Leu
 50 55 60
 Ile Ile Ala Val Asp His Glu Gly Gly Arg Val Gln Arg Phe Ile Glu
 65 70 75 80
 Gly Phe Thr Arg Leu Pro Ala Met Ser Thr Leu Gly Glu Ile Trp Asp
 85 90 95
 Lys Asp Gly Ala Ser Ala Ala Glu Thr Ala Ala Gly Gln Val Gly Arg
 100 105 110
 Val Leu Ala Thr Glu Leu Ser Ala Cys Gly Ile Asp Leu Ser Phe Thr
 115 120 125
 Pro Val Leu Asp Leu Asp Trp Gly Asn Cys Pro Val Ile Gly Asn Arg
 130 135 140
 Ser Phe His Arg Asn Pro Glu Ala Val Ala Arg Leu Ala Leu Ala Leu
 145 150 155 160
 Gln Lys Gly Leu Thr Lys Gly Gly Met Lys Ser Cys Gly Lys His Phe
 165 170 175
 Pro Gly His Gly Phe Val Glu Gly Asp Ser His Leu Val Leu Pro Glu
 180 185 190
 Asp Trp Arg Ser Leu Ser Glu Leu Glu Thr Ala Asp Leu Ala Pro Phe
 195 200 205
 Arg Ile Met Ser Arg Glu Gly Met Ala Ala Val Met Pro Ala His Val
 210 215 220
 Val Tyr Pro Gln Val Asp Thr Lys Pro Ala Gly Phe Ser Glu Ile Trp
 225 230 235 240
 Leu Lys Gln Ile Leu Arg Arg Asp Ile Gly Phe Lys Gly Val Ile Phe
 245 250 255
 Ser Asp Asp Leu Thr Met Glu Gly Ala Cys Gly Ala Gly Gly Ile Lys
 260 265 270
 Glu Arg Ala Arg Ile Ser Phe Glu Ala Gly Cys Asp Ile Val Leu Val
 275 280 285

Cys Asn Arg Pro Asp Leu Val Asp Glu Leu Arg Glu Asp Phe Arg Ile
 290 295 300
 Pro Asp Asn Pro Thr Leu Ala Gln Arg Trp Gln Tyr Met Ala Asn Thr
 305 310 315 320
 Leu Gly Ser Ala Ala Ala Gln Ala Val Met Gln Thr Ala Asp Phe Gln
 325 330 335
 Ala Ala Gln Ala Phe Val Ala Gly Leu Ala Ser Pro Gln Asp Thr Ala
 340 345 350
 Gly Gly Val Lys Val Gly Glu Ala Phe
 355 360

<210> 55
 <211> 397
 <212> PRT
 <213> Neisseria meningitidis

<400> 55
 Met Phe Phe Lys His Ile Glu Ala Ala Pro Ala Asp Pro Ile Leu Gly
 1 5 10 15
 Leu Gly Glu Ala Phe Lys Ala Glu Thr Arg Pro Glu Lys Val Asn Leu
 20 25 30
 Gly Ile Gly Val Tyr Lys Asp Ala Ser Gly Ala Thr Pro Leu Val Lys
 35 40 45
 Ala Val Lys Glu Ala Glu Lys Arg Leu Leu Glu Ser Glu Thr Thr Lys
 50 55 60
 Asn Tyr Leu Thr Ile Asp Gly Val Ala Asp Tyr Asn Ala Gln Thr Gln
 65 70 75 80
 Ile Leu Leu Phe Gly Lys Asp His Glu Ile Ile Ala Ser Arg Arg Ala
 85 90 95
 Lys Thr Ala Gln Ser Leu Gly Gly Thr Gly Ala Leu Arg Ile Ala Ala
 100 105 110
 Glu Phe Ala Lys Arg Gln Leu Asn Ala Gln Thr Ile Trp Ile Ser Asn
 115 120 125
 Pro Thr Trp Pro Asn His Asn Ala Ile Ala Lys Ala Val Gly Ile Gln
 130 135 140
 Asp Lys Pro Tyr Arg Tyr Tyr Asp Ala Ala Lys His Gly Leu Asp Trp
 145 150 155 160
 Asp Gly Met Ile Glu Asp Leu Ser Gln Ala Gln Lys Gly Asp Ile Val
 165 170 175
 Leu Leu His Gly Cys Cys His Asn Pro Thr Gly Ile Asp Pro Thr Pro
 180 185 190
 Glu Gln Trp Glu Thr Leu Ala Lys Leu Ser Ala Glu Lys Gly Trp Leu
 195 200 205
 Pro Leu Phe Asp Phe Ala Tyr Gln Gly Phe Gly Asn Gly Leu Glu Glu
 210 215 220
 Asp Ala Tyr Gly Leu Arg Val Phe Leu Lys His Asn Thr Glu Leu Leu

Ser Ser Ile Thr Cys Ala Gly Val Thr Thr Tyr Lys Ala Ile Lys Val
 145 150 155 160
 Ser Gly Val Arg Pro Gly Gln Trp Ile Ala Ile Tyr Gly Ala Gly Gly
 165 170 175
 Leu Gly Asn Leu Gly Val Gln Tyr Ala Lys Lys Val Phe Gly Ala His
 180 185 190
 Val Val Ala Ile Asp Ile Asn Asp Asp Lys Leu Ala Phe Ala Lys Glu
 195 200 205
 Thr Gly Ala Asp Leu Val Val Asn Ala Ala Lys Glu Asp Ala Ala Lys
 210 215 220
 Val Ile Gln Glu Lys Thr Gly Gly Ala His Ala Ala Val Val Thr Ala
 225 230 235 240
 Val Ser Ala Ala Ala Phe Asn Ser Ala Val Asn Cys Val Arg Ala Gly
 245 250 255
 Gly Arg Val Val Ala Ile Gly Leu Pro Pro Glu Ser Met Asp Leu Ser
 260 265 270
 Ile Pro Arg Leu Val Leu Asp Gly Ile Glu Val Val Gly Ser Leu Val
 275 280 285
 Gly Thr Arg Lys Asp Leu Glu Glu Ala Phe Gln Phe Gly Ala Glu Gly
 290 295 300
 Leu Val Val Pro Lys Val Gln Leu Arg Ala Leu Asp Glu Ala Pro Ala
 305 310 315 320
 Ile Phe Gln Glu Met Arg Glu Gly Lys Ile Thr Gly Arg Met Val Ile
 325 330 335
 Asp Met Lys Lys Glu Cys Gly Cys Gly His His His
 340 345

<210> 57
 <211> 405
 <212> PRT
 <213> Neisseria meningitidis

<400> 57
 Met Glu Ile Ile Leu Gly Ile Val Met Phe Thr Val Ile Val Leu Val
 1 5 10 15
 Leu Ala Leu Met Ile Leu Phe Ala Lys Ser Lys Leu Val Ser Glu Gly
 20 25 30
 Asp Ile Thr Ile Lys Val Asn Gly Glu Lys Glu Leu Thr Met Pro Ala
 35 40 45
 Gly Gly Lys Leu Leu Gly Ala Leu Ala Asn Glu Gly Ile Phe Ile Pro
 50 55 60
 Ser Ala Cys Gly Gly Gly Ser Cys Gly Gln Cys Arg Val Val Val
 65 70 75 80
 Lys Ser Gly Gly Gly Asp Ile Leu Pro Thr Glu Leu Ser His Ile Ser
 85 90 95

Lys Arg Glu Ala Arg Glu Gly Cys Arg Leu Ser Cys Gln Val Asn Val
 100 105 110
 Lys Thr Asp Met Asp Ile Glu Val Pro Glu Glu Val Phe Gly Val Lys
 115 120 125
 Lys Trp Glu Cys Thr Val Ile Ser Asn Asp Asn Lys Ala Thr Phe Ile
 130 135 140
 Lys Glu Leu Lys Leu Ala Ile Pro Glu Gly Glu Glu Val Pro Phe Arg
 145 150 155 160
 Ala Gly Gly Tyr Ile Gln Ile Glu Ala Pro Pro His Thr Val Ala Tyr
 165 170 175
 Lys Asp Phe Asp Ile Pro Lys Glu Tyr His Glu Asp Trp Asp Lys Tyr
 180 185 190
 Asn Leu Trp Gln Tyr Val Ser Lys Val Asp Glu Pro Ile Leu Arg Ala
 195 200 205
 Tyr Ser Met Ala Ser Tyr Pro Glu Glu Lys Gly Ile Ile Met Leu Asn
 210 215 220
 Val Arg Ile Ala Thr Pro Pro Pro Arg Val Pro Asp Ala Pro Pro Gly
 225 230 235 240
 Gln Met Ser Ser Tyr Ile Trp Ser Leu Lys Pro Gly Asp Lys Val Thr
 245 250 255
 Ile Ser Gly Pro Phe Gly Glu Phe Phe Ala Lys Asp Thr Asp Ala Glu
 260 265 270
 Met Val Phe Ile Gly Gly Gly Ala Gly Met Ala Pro Met Arg Ser His
 275 280 285
 Ile Phe Asp Gln Leu Lys Arg Leu Asn Ser Lys Arg Lys Ile Thr Phe
 290 295 300
 Trp Tyr Gly Ala Arg Ser Lys Arg Glu Met Phe Tyr Val Glu Asp Phe
 305 310 315 320
 Asp Gln Leu Ala Ala Glu Phe Pro Asn Phe Thr Trp His Val Ala Leu
 325 330 335
 Ser Asp Pro Leu Pro Glu Asp Asn Trp Asp Gly Tyr Thr Gly Phe Ile
 340 345 350
 His Asn Val Val Tyr Glu Asn His Leu Lys Asn His Glu Ala Pro Glu
 355 360 365
 Asp Cys Glu Phe Tyr Met Cys Gly Pro Pro Ile Met Asn Gln Ser Val
 370 375 380
 Ile Lys Met Leu Lys Asp Leu Gly Val Glu Asp Glu Asn Ile Leu Leu
 385 390 395 400
 Asp Asp Phe Gly Gly
 405

<210> 58
 <211> 121
 <212> PRT
 <213> Neisseria meningitidis

<400> 58
 Met Asn Leu Ile Gln Gln Leu Glu Gln Glu Glu Ile Ala Arg Leu Asn
 1 5 10 15
 Lys Glu Ile Pro Glu Phe Ala Pro Gly Asp Thr Val Val Val Ser Val
 20 25 30
 Arg Val Val Glu Gly Thr Arg Ser Arg Leu Gln Ala Tyr Glu Gly Val
 35 40 45
 Val Ile Ala Arg Arg Asn Arg Gly Leu Asn Ser Asn Phe Ile Val Arg
 50 55 60
 Lys Ile Ser Ser Gly Glu Gly Val Glu Arg Thr Phe Gln Leu Tyr Ser
 65 70 75 80
 Pro Thr Val Glu Lys Ile Glu Val Lys Arg Arg Gly Asp Val Arg Arg
 85 90 95
 Ala Lys Leu Tyr Tyr Leu Arg Gly Leu Thr Gly Lys Ala Ala Arg Ile
 100 105 110
 Lys Glu Lys Leu Pro Ala Arg Lys Gly
 115 120

<210> 59
 <211> 225
 <212> PRT
 <213> Neisseria meningitidis

<400> 59
 Met Ser Arg Val Leu Leu Val Asp Asp Asp Ala Leu Leu Thr Glu Leu
 1 5 10 15
 Leu Thr Glu Tyr Leu Ser Ala Glu Gly Leu Asn Val Arg Ser Val Pro
 20 25 30
 Asp Gly Glu Ala Gly Val Gln Glu Ile Leu Ser Gly Gln Tyr Asp Val
 35 40 45
 Val Val Leu Asp Ser Met Met Pro Lys Met Asn Gly Leu Asp Val Leu
 50 55 60
 Lys Asn Val Arg Ala Arg Ser Thr Val Pro Ile Ile Met Leu Thr Ala
 65 70 75 80
 Lys Gly Asp Asp Ile Asp Arg Ile Ile Gly Leu Glu Met Gly Ala Asp
 85 90 95
 Asp Tyr Val Pro Lys Pro Cys Thr Pro Arg Glu Leu Leu Ala Arg Ile
 100 105 110
 Asn Ala Ile Leu Arg Arg Ala Gln His Ser Gly Glu Gln Asn Asn Ala
 115 120 125
 Pro Asn Ser Ile Ser Val Ser Asp Val Val Leu Tyr Pro Ala Lys Arg
 130 135 140
 Gln Ala Ser Val Lys Asp Met Pro Leu Glu Leu Thr Ser Thr Glu Phe
 145 150 155 160
 Asn Leu Leu Glu Val Leu Met Arg His Ala Gly Gln Val Val Ser Lys
 165 170 175

Glu Thr Leu Ser Val Glu Ala Leu Asp Arg Lys Leu Ala Lys Phe Asp
 180 185 190
 Arg Ser Ile Asp Val His Ile Ser Ser Ile Arg His Lys Leu Gly Asp
 195 200 205
 Ala Ser Leu Ile Gln Thr Val Arg Gly Leu Gly Tyr Leu Phe Val Lys
 210 215 220

Asn
 225

<210> 60
 <211> 354
 <212> PRT
 <213> Neisseria meningitidis

<400> 60
 Met Lys Ala Ala Arg Phe Tyr Asp Lys Gly Asp Ile Arg Ile Glu Asp
 1 5 10 15
 Ile Pro Glu Pro Thr Val Ala Pro Gly Thr Val Gly Ile Asn Val Ala
 20 25 30
 Trp Cys Gly Ile Cys Gly Thr Asp Leu His Glu Phe Met Glu Gly Pro
 35 40 45
 Ile Phe Ile Pro Pro Cys Gly His Pro His Pro Ile Ser Gly Glu Ser
 50 55 60
 Ala Pro Val Thr Met Gly His Glu Phe Ser Gly Val Val Tyr Ala Val
 65 70 75 80
 Gly Glu Gly Val Asp Asp Ile Lys Val Gly Gln His Val Val Val Glu
 85 90 95
 Pro Tyr Ile Ile Arg Asp Asp Val Pro Thr Gly Glu Gly Ser Asn Tyr
 100 105 110
 His Leu Ser Lys Asp Met Asn Phe Ile Gly Leu Gly Gly Cys Gly Gly
 115 120 125
 Gly Leu Ser Glu Lys Ile Ala Val Lys Arg Arg Trp Val His Pro Ile
 130 135 140
 Ser Asp Lys Ile Pro Leu Asp Gln Ala Ala Leu Ile Glu Pro Leu Ser
 145 150 155 160
 Val Gly His His Ala Tyr Val Arg Ser Gly Ala Lys Glu Gly Asp Val
 165 170 175
 Ala Leu Val Gly Gly Ala Gly Pro Ile Gly Leu Leu Leu Ala Ala Val
 180 185 190
 Leu Lys Ala Lys Gly Ile Lys Val Ile Ile Thr Glu Leu Ser Lys Ala
 195 200 205
 Arg Lys Asp Lys Ala Arg Glu Ser Gly Val Ala Asp Tyr Ile Leu Asp
 210 215 220
 Pro Ser Glu Val Asp Val Val Ala Glu Val Lys Lys Leu Thr Asn Gly
 225 230 235 240

Glu Gly Val Asp Val Ala Phe Glu Cys Thr Ser Val Asn Lys Val Leu
 245 250 255
 Asp Thr Leu Val Glu Ala Cys Lys Pro Ala Ala Asn Leu Val Ile Val
 260 265 270
 Ser Ile Trp Ser His Pro Ala Thr Ile Asn Val His Ser Val Val Met
 275 280 285
 Lys Glu Leu Asp Val Arg Gly Thr Ile Ala Tyr Cys Asn Asp His Ala
 290 295 300
 Glu Thr Ile Lys Leu Val Glu Glu Gly Lys Ile Asn Leu Glu Pro Phe
 305 310 315 320
 Ile Thr Gln Arg Ile Lys Leu Asp Glu Leu Val Ser Lys Gly Phe Glu
 325 330 335
 Arg Leu Ile His Asn Asn Glu Ser Ala Val Lys Ile Ile Val Ser Pro
 340 345 350

Asn Leu

<210> 61
 <211> 419
 <212> PRT
 <213> Neisseria meningitidis

<400> 61
 Met Leu Pro Val Arg Phe Thr Arg Val Ser Asp Gly Ile Lys Arg Leu
 1 5 10 15
 Thr Pro Ala Ser Asn Gln Thr Ala Phe Tyr His Pro Phe Glu Asn Pro
 20 25 30
 Phe Cys Arg Tyr Ser Ser Phe Tyr Trp Ser Ile Ala Ile Met Thr Ala
 35 40 45
 Thr Thr Ala Ser Ser Ala Lys Pro Tyr Leu Lys Ile Gln Gly Leu Val
 50 55 60
 Lys Lys Phe Gly Asp Asn Tyr Ala Val Asp Asn Ile Asp Leu Asp Ile
 65 70 75 80
 Tyr Gln His Glu Ile Phe Ala Leu Leu Gly Ser Ser Gly Ser Gly Lys
 85 90 95
 Ser Thr Leu Leu Arg Met Leu Ala Gly Met Glu Ser Pro Asn Gln Gly
 100 105 110
 Lys Ile Ile Leu Asp Gly Gln Asp Ile Thr Lys Leu Ala Pro Tyr Asp
 115 120 125
 Arg Pro Ile Asn Met Met Phe Gln Ser Tyr Ala Leu Phe Pro His Met
 130 135 140
 Thr Val Glu Gln Asn Ile Ala Phe Gly Leu Lys Gln Asp Lys Met Pro
 145 150 155 160
 Lys Gly Glu Ile Ala Ala Arg Val Glu Glu Met Leu Arg Leu Val Gln
 165 170 175
 Met Thr Lys Phe Ala Lys Arg Lys Pro His Gln Leu Ser Gly Gly Gln

180					185					190					
Gln	Gln	Arg	Ile	Ala	Leu	Ala	Arg	Ser	Leu	Ala	Lys	Arg	Pro	Lys	Ile
		195					200					205			
Leu	Leu	Leu	Asp	Glu	Pro	Leu	Gly	Ala	Leu	Asp	Lys	Lys	Leu	Arg	Gln
	210					215					220				
Gln	Thr	Gln	Leu	Glu	Leu	Val	Asn	Thr	Leu	Glu	Gln	Val	Gly	Val	Thr
	225					230					235				
Cys	Ile	Met	Val	Thr	His	Asp	Gln	Glu	Glu	Ala	Met	Thr	Met	Ala	Thr
				245					250					255	
Arg	Ile	Ala	Ile	Met	Ser	Asp	Gly	Gln	Leu	Gln	Gln	Val	Gly	Thr	Pro
			260					265						270	
Ser	Asp	Val	Tyr	Asp	Tyr	Pro	Asn	Ser	Arg	Phe	Thr	Ala	Glu	Phe	Ile
		275					280					285			
Gly	Glu	Thr	Asn	Ile	Phe	Asp	Gly	Val	Val	Ile	Glu	Asp	His	Ala	Asp
	290					295					300				
Tyr	Ala	Val	Ile	Glu	Cys	Glu	Gly	Leu	Glu	Asn	His	Val	Arg	Ile	Asp
	305					310					315				320
His	Gly	Leu	Gly	Gly	Pro	Ser	Glu	Gln	Asp	Leu	Trp	Val	Ser	Ile	Arg
				325					330					335	
Pro	Glu	Asp	Ile	Asp	Leu	Tyr	Lys	Glu	Lys	Pro	Glu	Tyr	Leu	Gly	Asp
			340					345					350		
Tyr	Asn	Trp	Ala	Lys	Gly	Thr	Val	Lys	Glu	Ile	Ala	Tyr	Leu	Gly	Ser
		355					360					365			
Phe	Ala	Ile	Tyr	His	Ile	Lys	Leu	Gly	Asn	Gly	Arg	Val	Val	Lys	Ser
	370					375					380				
Gln	Val	Pro	Ala	Pro	Tyr	Trp	Tyr	Val	Arg	Asn	Ile	Thr	Pro	Pro	Thr
	385					390					395				400
Trp	Asp	Glu	Thr	Val	Tyr	Ile	Ser	Trp	Pro	Glu	Asn	Gln	Pro	Thr	Pro
				405					410					415	

Leu Phe Arg

<210> 62
 <211> 419
 <212> PRT
 <213> Neisseria meningitidis

<400> 62
 Met His Val Ser Glu Leu Gln Thr Leu His Ile Ser Lys Leu Leu Glu
 1 5 10 15
 Leu Ala Glu Glu His Gly Ile Glu Asn Ala Asn Arg Phe Arg Lys Gln
 20 25 30
 Asp Leu Val Phe Ala Ile Val Arg Gln Met Met Lys Lys Gly Glu Gly
 35 40 45
 Phe Thr Cys Ser Gly Thr Leu Glu Ile Leu Pro Asp Gly Phe Gly Phe
 50 55 60

Leu Arg Ser Ala Asp Thr Ser Tyr Leu Ala Gly Pro Asp Asp Ile Tyr
 65 70 75 80
 Val Ser Pro Thr Gln Ile Arg Arg Phe Asn Leu His Thr Gly Asp Thr
 85 90 95
 Ile Glu Gly Ser Val Arg Val Pro Lys Asp Asn Glu Arg Tyr Phe Ala
 100 105 110
 Leu Val Arg Leu Asp Thr Ile Asn Gly Asp His Pro Glu Val Cys Arg
 115 120 125
 His Lys Ile Leu Phe Glu Asn Leu Thr Pro Leu Phe Pro Thr Glu Gln
 130 135 140
 Leu Lys Leu Glu Arg Asp Leu Lys Ser Glu Glu Asn Leu Thr Gly Arg
 145 150 155 160
 Ala Ile Asp Leu Ile Ser Pro Ile Gly Lys Gly Gln Arg Ala Leu Leu
 165 170 175
 Val Ala Pro Pro Lys Ser Gly Lys Thr Val Met Leu Gln Asn Ile Ala
 180 185 190
 His Ala Val Thr Ala Asn Tyr Pro Glu Val Glu Leu Ile Val Leu Leu
 195 200 205
 Ile Asp Glu Arg Pro Glu Glu Val Thr Glu Met Ser Arg Ser Val Arg
 210 215 220
 Gly Glu Val Val Ser Ser Thr Phe Asp Glu Pro Ala Gln Arg His Val
 225 230 235 240
 Gln Val Ala Glu Met Val Leu Glu Lys Ala Lys Arg Met Val Glu His
 245 250 255
 Lys Lys Asp Val Val Ile Leu Leu Asp Ser Ile Thr Arg Leu Ala Arg
 260 265 270
 Ala Tyr Asn Thr Val Val Pro Thr Ser Gly Lys Ile Leu Thr Gly Gly
 275 280 285
 Val Asp Ala Asn Ala Leu His Arg Pro Lys Arg Phe Phe Gly Ala Ala
 290 295 300
 Arg Asn Val Glu Glu Gly Gly Ser Leu Thr Ile Ile Ala Thr Ala Leu
 305 310 315 320
 Val Glu Thr Gly Ser Arg Met Asp Asp Val Ile Tyr Glu Glu Phe Lys
 325 330 335
 Gly Thr Gly Asn Met Glu Leu His Leu Asp Arg Arg Met Ala Glu Lys
 340 345 350
 Arg Leu Phe Pro Ala Ile Asn Ile Asn Lys Ser Gly Thr Arg Arg Glu
 355 360 365
 Glu Leu Leu Val Pro Asn Asp Gln Leu Gln Arg Met Trp Leu Leu Arg
 370 375 380
 Lys Phe Leu His Pro Met Asp Glu Ile Glu Ala Ala Glu Phe Leu Ile
 385 390 395 400

Gly Lys Ile Lys Ala Ser Lys Asn Asn Asp⁷⁹ Asp Phe Phe Glu Leu Met
 405 410 415

Arg Gly Lys

<210> 63
 <211> 794
 <212> PRT
 <213> Neisseria meningitidis

<400> 63
 Met Ala Asp Asn Tyr Val Ile Trp Phe Glu Asn Leu Arg Met Thr Asp
 1 5 10 15
 Val Glu Arg Val Gly Gly Lys Asn Ala Ser Leu Gly Glu Met Ile Ser
 20 25 30
 Gln Leu Thr Glu Lys Gly Val Arg Val Pro Gly Gly Phe Ala Thr Thr
 35 40 45
 Ala Glu Ala Tyr Arg Ala Phe Leu Ala His Asn Gly Leu Ser Glu Arg
 50 55 60
 Ile Ser Ala Ala Leu Ala Lys Leu Asp Val Glu Asp Val Ala Glu Leu
 65 70 75 80
 Ala Arg Val Gly Lys Glu Ile Arg Gln Trp Ile Leu Asp Thr Pro Phe
 85 90 95
 Pro Glu Gln Leu Asp Ala Glu Ile Glu Ala Ala Trp Asn Lys Met Val
 100 105 110
 Ala Asp Ala Gly Gly Ala Asp Ile Ser Val Ala Val Arg Ser Ser Ala
 115 120 125
 Thr Ala Glu Asp Leu Pro Asp Ala Ser Phe Ala Gly Gln Gln Glu Thr
 130 135 140
 Phe Leu Asn Ile Asn Gly Leu Asp Asn Val Lys Glu Ala Met His His
 145 150 155 160
 Val Phe Ala Ser Leu Tyr Asn Asp Arg Ala Ile Ser Tyr Arg Val His
 165 170 175
 Lys Gly Phe Glu His Asp Ile Val Ala Leu Ser Ala Gly Val Gln Arg
 180 185 190
 Met Val Arg Ser Asp Ser Gly Ala Ser Gly Val Met Phe Thr Leu Asp
 195 200 205
 Thr Glu Ser Gly Tyr Asp Gln Val Val Phe Val Thr Ser Ser Tyr Gly
 210 215 220
 Leu Gly Glu Asn Val Val Gln Gly Ala Val Asn Pro Asp Glu Phe Tyr
 225 230 235 240
 Val Phe Lys Pro Thr Leu Lys Ala Gly Lys Pro Ala Ile Leu Arg Lys
 245 250 255
 Thr Met Gly Ser Lys His Ile Lys Met Ile Phe Thr Asp Lys Ala Glu
 260 265 270
 Ala Gly Lys Ser Val Thr Asn Val Asp Val Pro Glu Glu Asp Arg Asn

										80					
		275					280					285			
Arg	Phe	Ser	Ile	Thr	Asp	Glu	Glu	Ile	Thr	Glu	Leu	Ala	His	Tyr	Ala
	290					295					300				
Leu	Thr	Ile	Glu	Lys	His	Tyr	Gly	Arg	Pro	Met	Asp	Ile	Glu	Trp	Gly
305					310					315					320
Arg	Asp	Gly	Leu	Asp	Gly	Lys	Leu	Tyr	Ile	Leu	Gln	Ala	Arg	Pro	Glu
				325					330					335	
Thr	Val	Lys	Ser	Gln	Glu	Glu	Gly	Asn	Arg	Asn	Leu	Arg	Arg	Phe	Ala
			340					345					350		
Ile	Asn	Gly	Asp	Lys	Thr	Val	Leu	Cys	Glu	Gly	Arg	Ala	Ile	Gly	Gln
		355					360					365			
Lys	Val	Gly	Gln	Gly	Lys	Val	Arg	Leu	Ile	Lys	Asp	Ala	Ser	Glu	Met
	370					375					380				
Asp	Ser	Val	Glu	Ala	Gly	Asp	Val	Leu	Val	Thr	Asp	Met	Thr	Asp	Pro
385					390					395					400
Asp	Trp	Glu	Pro	Val	Met	Lys	Arg	Ala	Ser	Ala	Ile	Val	Thr	Asn	Arg
				405					410					415	
Gly	Gly	Arg	Thr	Cys	His	Ala	Ala	Ile	Ile	Ala	Arg	Glu	Leu	Gly	Ile
			420					425					430		
Pro	Ala	Val	Val	Gly	Cys	Gly	Asn	Ala	Thr	Glu	Leu	Leu	Lys	Asn	Gly
		435					440					445			
Gln	Glu	Val	Thr	Val	Ser	Cys	Ala	Glu	Gly	Asp	Thr	Gly	Phe	Ile	Tyr
	450					455					460				
Ala	Gly	Leu	Leu	Asp	Val	Gln	Ile	Thr	Asp	Val	Ala	Leu	Asp	Asn	Met
465					470					475					480
Pro	Lys	Ala	Pro	Val	Lys	Val	Met	Met	Asn	Val	Gly	Asn	Pro	Glu	Leu
				485					490					495	
Ala	Phe	Ser	Phe	Ala	Asn	Leu	Pro	Ser	Glu	Gly	Ile	Gly	Leu	Ala	Arg
			500					505					510		
Met	Glu	Phe	Ile	Ile	Asn	Arg	Gln	Ile	Gly	Ile	His	Pro	Lys	Ala	Leu
		515					520					525			
Leu	Glu	Phe	Asp	Lys	Gln	Asp	Asp	Glu	Leu	Lys	Ala	Glu	Ile	Thr	Arg
	530					535					540				
Arg	Ile	Ala	Gly	Tyr	Ala	Ser	Pro	Val	Asp	Phe	Tyr	Val	Asp	Lys	Ile
545					550					555					560
Ala	Glu	Gly	Val	Ala	Thr	Leu	Ala	Ala	Ser	Val	Tyr	Pro	Arg	Lys	Thr
				565					570					575	
Ile	Val	Arg	Met	Ser	Asp	Phe	Lys	Ser	Asn	Glu	Tyr	Ala	Asn	Leu	Val
			580					585					590		
Gly	Gly	Asn	Val	Tyr	Glu	Pro	His	Glu	Glu	Asn	Pro	Met	Leu	Gly	Phe
		595					600					605			
Arg	Gly	Ala	Ala	Arg	Tyr	Val	Ala	Asp	Asn	Phe	Lys	Asp	Cys	Phe	Ala
	610					615					620				

Leu Glu Cys Lys Ala Leu Lys Arg Val Arg Asp Glu Met Gly Leu Thr
 625 630 635 640
 Asn Val Glu Ile Met Ile Pro Phe Val Arg Thr Leu Gly Glu Ala Glu
 645 650 655
 Ala Val Val Lys Ala Leu Lys Glu Asn Gly Leu Glu Arg Gly Lys Asn
 660 665 670
 Gly Leu Arg Leu Ile Met Met Cys Glu Leu Pro Ser Asn Ala Val Leu
 675 680 685
 Ala Glu Gln Phe Leu Gln Tyr Phe Asp Gly Phe Ser Ile Gly Ser Asn
 690 695 700
 Asp Met Thr Gln Leu Thr Leu Gly Leu Asp Arg Asp Ser Gly Leu Val
 705 710 715 720
 Ser Glu Ser Phe Asp Glu Arg Asn Pro Ala Val Lys Val Met Leu His
 725 730 735
 Leu Ala Ile Ser Ala Cys Arg Lys Gln Asn Lys Tyr Val Gly Ile Cys
 740 745 750
 Gly Gln Gly Pro Ser Asp His Pro Asp Phe Ala Lys Trp Leu Val Glu
 755 760 765
 Glu Gly Ile Glu Ser Val Ser Leu Asn Pro Asp Thr Val Ile Glu Thr
 770 775 780
 Trp Leu Tyr Leu Ala Asn Glu Leu Asn Lys
 785 790

<210> 64
 <211> 379
 <212> PRT
 <213> Neisseria meningitidis

<400> 64
 Met Lys Lys Thr Leu Val Ala Ala Ala Ile Leu Ser Leu Ala Leu Thr
 1 5 10 15
 Ala Cys Gly Gly Gly Ser Asp Thr Ala Ala Gln Thr Pro Ser Ala Lys
 20 25 30
 Pro Glu Ala Glu Gln Ser Gly Lys Leu Asn Ile Tyr Asn Trp Ser Asp
 35 40 45
 Tyr Val Asp Pro Glu Thr Val Ala Ala Phe Glu Lys Glu Thr Gly Ile
 50 55 60
 Lys Thr Arg Ser Asp Tyr Tyr Asp Ser Asn Glu Thr Leu Glu Ala Lys
 65 70 75 80
 Val Leu Thr Gly Lys Ser Gly Tyr Asp Leu Thr Ala Pro Ser Ile Ala
 85 90 95
 Asn Val Gly Arg Gln Ile Lys Ala Gly Ala Tyr Gln Lys Ile Asp Lys
 100 105 110
 Ala Gln Ile Pro His Tyr Gly Asn Ile Asp Lys Asp Leu Leu Lys Met
 115 120 125

Met Glu Ala Val Asp Pro Gly Asn Glu Tyr Ala Val Pro Tyr Phe Trp
 130 135 140 82
 Gly Ile Asn Thr Leu Ala Ile Asn Thr Gln Gln Val Lys Lys Ala Leu
 145 150 155
 Gly Thr Asp Lys Leu Pro Glu Asn Glu Trp Asp Leu Val Phe Lys Pro
 165 170 175
 Glu Tyr Thr Ala Lys Leu Lys Ser Cys Gly Ile Ser Tyr Phe Asp Ser
 180 185 190
 Ala Ile Glu Gln Ile Pro Leu Ala Leu His Tyr Leu Gly Lys Asp Pro
 195 200 205
 Asn Ser Glu Asn Pro Glu Asp Ile Lys Ala Ala Val Asp Met Met Lys
 210 215 220
 Ala Val Arg Gly Asp Val Lys Arg Phe Ser Ser Ser Gly Tyr Ile Asp
 225 230 235 240
 Asp Met Ala Ala Gly Asn Leu Cys Ala Ala Ile Gly Tyr Gly Gly Asp
 245 250 255
 Leu Asn Ile Ala Lys Thr Arg Ala Glu Glu Ala Ala Asn Gly Val Glu
 260 265 270
 Ile Lys Val Leu Thr Pro Lys Thr Gly Val Gly Val Trp Val Asp Ser
 275 280 285
 Phe Met Ile Pro Arg Asp Ala Gln Asn Val Ala Asn Ala His Arg Tyr
 290 295 300
 Ile Asp Tyr Thr Leu Arg Pro Glu Val Ala Ala Lys Asn Gly Ser Phe
 305 310 315 320
 Val Thr Tyr Ala Pro Ala Ser Arg Pro Ala Arg Glu Leu Met Asp Glu
 325 330 335
 Lys Tyr Thr Ser Asp Ala Ser Ile Phe Pro Asn Lys Glu Leu Met Glu
 340 345 350
 Lys Ser Phe Ile Val Ser Pro Lys Ser Ala Glu Ser Val Lys Leu Gly
 355 360 365
 Val Lys Leu Trp Gln Gly Leu Lys Ala Gly Lys
 370 375

<210> 65
 <211> 500
 <212> PRT
 <213> Neisseria meningitidis

<400> 65
 Met Ala Lys Val Leu Ile Val Pro Val Ser Ala Gly Leu Asp Ala Ser
 1 5 10 15
 Ala Ala Ala Gln Ala Phe Ala Lys Ala Leu Asp Ala Gln Ile Phe Gln
 20 25 30
 Ala Val Asp Ala Thr Ala Glu Thr Leu Leu Ala Gln Gly Lys Ser Asp
 35 40 45
 Asp Trp Phe Asp Ala Leu Val Gly Lys Val Ala Ala Leu Asp Ala Ala

50						55				83		60			
Asn 65	Leu	Val	Ile	Glu	Gly 70	Ile	Ala	Pro	Asp	Ala 75	Asp	Lys	Ile	Tyr	Leu 80
Ala	Gly	Lys	Asn	Val 85	Glu	Leu	Ala	Leu	Ser 90	Leu	Asp	Ala	Ala	Ala	Val 95
Phe	Ala	Val	Arg 100	Ser	Asp	Asn	Ala	Asp 105	Ala	Asp	Glu	Leu	Ala	Asn	Arg
Val	Asn	Leu 115	Ala	Lys	Gln	Phe	Phe 120	Ala	Ala	Ala	Pro	Gly 125	Val	Leu	Glu
Gly 130	Phe	Val	Val	Asp	Gly	Ala 135	Ala	Ala	Ser	Val	Ala 140	Glu	Ala	Ala	Ala
Glu 145	Lys	Thr	Gly	Leu	Thr 150	Phe	Phe	Gly	Ser	Ser 155	Asp	Ala	Leu	Lys	Asp 160
Val	Ser	Val	Leu	Ala 165	Gly	Arg	Glu	Ala	Lys 170	Arg	Leu	Ser	Pro	Ala	Gln 175
Phe	Arg	Tyr	Asn 180	Leu	Ile	Asp	Phe	Ala 185	Arg	Gln	Ala	Asp	Lys	Arg	Ile 190
Val	Leu	Pro 195	Glu	Gly	Ala	Glu	Pro 200	Arg	Thr	Val	Gln	Ala	Ala	Ala	Ile 205
Cys	His 210	Glu	Lys	Gly	Ile	Ala 215	Arg	Cys	Val	Leu	Leu 220	Ala	Lys	Arg	Glu
Glu 225	Val	Glu	Ala	Val	Ala 230	Lys	Glu	Arg	Gly	Ile 235	Ser	Leu	Pro	Asp	Ser 240
Leu	Glu	Ile	Ile	Asp 245	Pro	Ala	Ser	Leu	Val 250	Glu	Gln	Tyr	Val	Glu	Pro 255
Met	Cys	Glu	Leu 260	Arg	Lys	Ser	Lys	Gly 265	Leu	Thr	Pro	Glu	Asp 270	Ala	Arg
Lys	Gln	Leu 275	Gln	Asp	Thr	Val	Val 280	Leu	Gly	Thr	Met	Met 285	Met	Ala	Gln
Asn	Asp 290	Val	Asp	Gly	Leu	Val 295	Ser	Gly	Ala	Val	His 300	Thr	Thr	Ala	Asn
Thr 305	Ile	Arg	Pro	Ala	Leu 310	Gln	Leu	Ile	Lys	Thr 315	Ala	Pro	Gly	Ala	Ser 320
Leu	Val	Ser	Ser	Val 325	Phe	Phe	Met	Leu	Leu 330	Pro	Asn	Gln	Val	Leu	Val 335
Phe	Gly	Asp	Cys 340	Ala	Val	Asn	Pro	Asn 345	Pro	Thr	Ala	Gln	Gln	Leu	Ala 350
Asp	Ile	Ala 355	Ile	Gln	Ser	Ala	Asp 360	Ser	Ala	Lys	Ala	Phe	Gly	Ile	Asp 365
Pro	Lys 370	Val	Ala	Met	Ile	Ser 375	Tyr	Ser	Thr	Val	Asn 380	Ser	Gly	Ser	Gly
Pro 385	Asp	Val	Asp	Thr	Val 390	Ile	Glu	Ala	Thr	Lys 395	Leu	Ala	Arg	Glu	Lys 400

Arg Pro Asp Leu Ala Ile Asp Gly Pro Leu Gln Tyr Asp Ala Ala Thr
 405 410 415
 Val Pro Gly Val Gly Lys Ser Lys Ala Pro Gly Ser Pro Val Ala Gly
 420 425 430
 Gln Ala Thr Val Leu Val Phe Pro Asp Leu Asn Thr Gly Asn Cys Thr
 435 440 445
 Tyr Lys Ala Val Gln Arg Asn Ala Asn Val Leu Ser Val Gly Pro Leu
 450 455 460
 Leu Gln Gly Leu Arg Lys Pro Val Asn Asp Leu Ser Arg Gly Ala Leu
 465 470 475 480
 Val Glu Asp Ile Val Phe Thr Ile Ala Leu Thr Ala Val Gln Ala Lys
 485 490 495
 Gln Met Glu Gly
 500

<210> 66
 <211> 331
 <212> PRT
 <213> Neisseria meningitidis

<400> 66
 Met Lys Thr Ser Ile Arg Tyr Ala Leu Leu Ala Ala Ala Leu Thr Ala
 1 5 10 15
 Ala Thr Pro Ala Leu Ala Asp Ile Thr Val Tyr Asn Gly Gln His Lys
 20 25 30
 Glu Ala Ala Gln Ala Val Ala Asp Ala Phe Thr Arg Ala Thr Gly Ile
 35 40 45
 Lys Val Lys Leu Asn Ser Ala Lys Gly Asp Gln Leu Ala Gly Gln Ile
 50 55 60
 Lys Glu Glu Gly Ser Arg Ser Pro Ala Asp Val Phe Tyr Ser Glu Gln
 65 70 75 80
 Ile Pro Ala Leu Ala Thr Leu Ser Ala Ala Asn Leu Leu Glu Pro Leu
 85 90 95
 Pro Ala Ser Thr Ile Asn Glu Thr Arg Gly Lys Gly Val Pro Val Ala
 100 105 110
 Ala Lys Lys Asp Trp Val Ala Leu Ser Gly Arg Ser Arg Val Val Val
 115 120 125
 Tyr Asp Thr Arg Lys Leu Ser Glu Lys Asp Leu Glu Lys Ser Val Leu
 130 135 140
 Asn Tyr Ala Thr Pro Lys Trp Lys Asn Arg Ile Gly Tyr Ala Pro Thr
 145 150 155 160
 Ser Gly Ala Phe Leu Glu Gln Val Val Ala Ile Val Lys Leu Lys Gly
 165 170 175
 Glu Ala Ala Ala Leu Lys Trp Leu Lys Gly Leu Lys Glu Tyr Gly Lys
 180 185 190

Pro Tyr Ala Lys Asn Ser Val Ala Leu Gln Ala Val Glu Asn Gly Glu
 195 200 205
 Ile Asp Ala Ala Leu Ile Asn Asn Tyr Tyr Trp His Ala Phe Ala Arg
 210 215 220
 Glu Lys Gly Val Gln Asn Val His Thr Arg Leu Asn Phe Val Arg His
 225 230 235 240
 Arg Asp Pro Gly Ala Leu Val Thr Tyr Ser Gly Ala Ala Val Leu Lys
 245 250 255
 Ser Ser Gln Asn Lys Asp Glu Ala Lys Lys Phe Val Ala Phe Leu Ala
 260 265 270
 Ser Lys Glu Gly Gln Arg Ala Leu Thr Ala Val Arg Ala Glu Tyr Pro
 275 280 285
 Leu Asn Pro His Val Val Ser Thr Phe Asn Leu Glu Pro Ile Ala Lys
 290 295 300
 Leu Glu Ala Pro Gln Val Ser Ala Thr Thr Val Ser Glu Lys Glu His
 305 310 315 320
 Ala Thr Arg Leu Leu Glu Gln Ala Gly Met Lys
 325 330

<210> 67
 <211> 458
 <212> PRT
 <213> Neisseria meningitidis

<400> 67
 Met His Asp Lys Thr Trp Ser Gly Arg Phe Asn Glu Pro Val Ser Glu
 1 5 10 15
 Leu Val Lys Gln Tyr Thr Ala Ser Ile Gly Phe Asp Arg Arg Leu Ala
 20 25 30
 Glu Trp Asp Ile Gln Gly Ser Leu Ala His Ala Gln Met Leu Lys Glu
 35 40 45
 Thr Gly Val Leu Asp Glu Gly Asp Leu Ala Asp Ile Arg Arg Gly Met
 50 55 60
 Ala Glu Ile Leu Glu Glu Ile Arg Ser Gly Lys Ile Glu Trp Ser Ser
 65 70 75 80
 Asp Leu Glu Asp Val His Met Asn Ile Glu Arg Arg Leu Thr Asp Lys
 85 90 95
 Ile Gly Asp Ala Gly Lys Arg Leu His Thr Gly Arg Ser Arg Asn Asp
 100 105 110
 Gln Val Ala Thr Asp Ile Arg Leu Trp Leu Arg Asp Gln Ile Thr Val
 115 120 125
 Ile Gln Ser Leu Ile Gln Ser Leu Gln Thr Ala Leu Leu Asp Leu Ala
 130 135 140
 Glu Gln Asn Ala Glu Thr Val Met Pro Gly Phe Thr His Leu Gln Val
 145 150 155 160
 Ala Gln Pro Val Ser Phe Gly His His Met Leu Ala Tyr Val Glu Met

165								170				86		175			
Leu	Gly	Arg	Asp 180	Asn	Glu	Arg	Met	Ala 185	Asp	Cys	Arg	Cys	Arg 190	Val	Asn		
Arg	Met	Pro 195	Leu	Gly	Ala	Ala	Ala 200	Leu	Ala	Gly	Thr	Thr 205	Tyr	Pro	Ile		
Gln	Arg 210	Glu	Ile	Thr	Ala	Glu 215	Leu	Leu	Gly	Phe	Glu 220	Gln	Ile	Cys	Gln		
Asn 225	Ser	Leu	Asp	Ala	Val 230	Ser	Asp	Arg	Asp	Phe 235	Ala	Ile	Glu	Phe	Thr 240		
Ala	Ala	Ala	Ser	Leu 245	Val	Met	Val	His	Leu 250	Ser	Arg	Leu	Ser	Glu 255	Glu		
Leu	Ile	Leu	Trp 260	Met	Ser	Pro	Arg	Phe 265	Gly	Phe	Ile	Asp	Ile 270	Ala	Asp		
Arg	Phe	Cys 275	Thr	Gly	Ser	Ser	Ile 280	Met	Pro	Gln	Lys	Lys 285	Asn	Pro	Asp		
Val	Pro 290	Glu	Leu	Val	Arg	Gly 295	Lys	Ser	Gly	Arg	Val 300	Ile	Gly	His	Leu		
Ile 305	Gly	Leu	Ile	Thr	Leu 310	Met	Lys	Ser	Gln	Pro 315	Leu	Ala	Tyr	Asn	Lys 320		
Asp	Asn	Gln	Glu	Asp 325	Lys	Glu	Pro	Leu	Phe 330	Asp	Thr	Ala	Asp	Thr 335	Leu		
Ile	Asp	Thr	Leu 340	Arg	Ile	Tyr	Ala	Asp 345	Met	Met	Arg	Gly	Val 350	Thr	Val		
Lys	Pro	Asp 355	Asn	Met	Arg	Ala	Ala 360	Val	Met	Gln	Gly	Phe 365	Ala	Thr	Ala		
Thr	Asp 370	Leu	Ala	Asp	Tyr	Leu 375	Val	Lys	Lys	Gly	Met 380	Pro	Phe	Arg	Asp		
Ala 385	His	Glu	Val	Val	Ala 390	Gln	Ala	Val	Arg	His 395	Ala	Asp	Gln	Ala	Gly 400		
Val	Asp	Leu	Ser	Glu 405	Leu	Pro	Leu	Glu	Val 410	Leu	Gln	Gly	Phe	Ser 415	Asp		
Leu	Ile	Ala	Asp 420	Asp	Val	Tyr	Gly	Val 425	Leu	Thr	Pro	Glu	Gly 430	Ser	Leu		
Asn	Ala	Arg 435	Asn	His	Leu	Gly	Gly 440	Thr	Ala	Pro	Glu	Gln 445	Val	Arg	Phe		
Gln	Val 450	Lys	Arg	Trp	Arg	Glu 455	Met	Leu	Ala								
<210>		68															
<211>		177															
<212>		PRT															
<213>		Neisseria meningitidis															
<400>		68															
Met 1	Ala	Asp	Phe	Asn 5	Gln	Ile	Leu	Thr	Pro 10	Gly	Asp	Val	Asp	Gly 15	Gly		

Ile Ile Asn Val Val Asn Glu Ile Pro Ala Gly Ser Asn His Lys Ile
 20 25 30
 Glu Trp Asn Arg Lys Leu Ala Ala Phe Gln Leu Asp Arg Val Glu Pro
 35 40 45
 Ala Ile Phe Ala Lys Pro Thr Asn Tyr Gly Phe Ile Pro Gln Thr Leu
 50 55 60
 Asp Glu Asp Gly Asp Glu Leu Asp Val Leu Leu Val Thr Glu Gln Pro
 65 70 75 80
 Leu Ala Thr Gly Val Phe Leu Glu Ala Arg Val Ile Gly Val Met Lys
 85 90 95
 Phe Val Asp Asp Gly Glu Val Asp Asp Lys Ile Val Cys Val Pro Ala
 100 105 110
 Asp Asp Arg Asn Asn Gly Asn Ala Tyr Lys Thr Leu Ser Asp Leu Pro
 115 120 125
 Gln Gln Leu Ile Lys Gln Ile Glu Phe His Phe Asn His Tyr Lys Asp
 130 135 140
 Leu Lys Lys Ala Gly Thr Thr Lys Val Glu Ser Trp Gly Asp Ala Glu
 145 150 155 160
 Glu Ala Lys Lys Val Ile Lys Glu Ser Ile Glu Arg Trp Asn Lys Gln
 165 170 175

Ala

<210> 69
 <211> 174
 <212> PRT
 <213> Neisseria meningitidis

<400> 69
 Met Lys Lys Ala Leu Ala Thr Leu Ile Ala Leu Ala Leu Pro Ala Ala
 1 5 10 15
 Ala Leu Ala Glu Gly Ala Ser Gly Phe Tyr Val Gln Ala Asp Ala Ala
 20 25 30
 His Ala Lys Ala Ser Ser Ser Leu Gly Ser Ala Lys Gly Phe Ser Pro
 35 40 45
 Arg Ile Ser Ala Gly Tyr Arg Ile Asn Asp Leu Arg Phe Ala Val Asp
 50 55 60
 Tyr Thr Arg Tyr Lys Asn Tyr Lys Ala Pro Ser Thr Asp Phe Lys Leu
 65 70 75 80
 Tyr Ser Ile Gly Ala Ser Ala Ile Tyr Asp Phe Asp Thr Gln Ser Pro
 85 90 95
 Val Lys Pro Tyr Leu Gly Ala Arg Leu Ser Leu Asn Arg Ala Ser Val
 100 105 110
 Asp Leu Gly Gly Ser Asp Ser Phe Ser Gln Thr Ser Ile Gly Leu Gly
 115 120 125

Val Leu Thr Gly Val Ser Tyr Ala Val Thr Pro Asn Val Asp Leu Asp
130 135 140 88
Ala Gly Tyr Arg Tyr Asn Tyr Ile Gly Lys Val Asn Thr Val Lys Asn
145 150 155 160
Val Arg Ser Gly Glu Leu Ser Ala Gly Val Arg Val Lys Phe
165 170

<210> 70
<211> 259
<212> PRT
<213> Neisseria meningitidis

<400> 70
Met Lys Glu His Lys Ala Arg Lys Arg Phe Gly Gln Asn Phe Leu Gln
1 5 10 15
Asp Thr Arg Ile Ile Ser Asp Ile Val Asn Ala Val Arg Pro Gln Ala
20 25 30
Asp Asp Val Val Ile Glu Ile Gly Pro Gly Leu Ala Ala Ile Thr Glu
35 40 45
Pro Leu Ala Lys Lys Leu Asn Arg Leu His Val Val Glu Ile Asp Arg
50 55 60
Asp Ile Val Cys Arg Leu Lys Thr Leu Pro Phe Ala Asp Lys Leu Val
65 70 75 80
Ile His Glu Gly Asp Val Leu Gln Phe Asp Phe Asn Gly Ile Ala Gly
85 90 95
Lys Lys Lys Ile Val Gly Asn Leu Pro Tyr Asn Ile Ser Thr Pro Leu
100 105 110
Leu Phe Lys Leu Ala Glu Val Ala Asp Asp Val Val Asp Met His Phe
115 120 125
Met Leu Gln Lys Glu Val Val Glu Arg Met Val Ala Ala Pro Lys Ser
130 135 140
Asn Asp Tyr Gly Arg Leu Gly Val Met Leu Gln Tyr Phe Phe Asp Met
145 150 155 160
Glu Met Leu Ile Asp Val Pro Pro Glu Ser Phe Asp Pro Ala Pro Lys
165 170 175
Val Asp Ser Ala Val Val Arg Met Ile Pro Val Lys His Arg Ile Gly
180 185 190
Lys Ala Asp Asp Phe Glu His Phe Ala Lys Leu Val Lys Leu Ala Phe
195 200 205
His Gln Arg Arg Lys Thr Ile Arg Asn Asn Leu Lys Glu Leu Ala Gly
210 215 220
Asp Asp Asp Leu Gln Ala Val Gly Ile Asn Pro Gln Asp Arg Ala Glu
225 230 235 240
His Ile Ala Pro Glu Lys Tyr Val Ala Leu Ser Asn Tyr Leu Ala Gly
245 250 255
Lys Val Val

<210> 71
 <211> 267
 <212> PRT
 <213> Neisseria meningitidis

<400> 71
 Met Lys Lys Ile Leu Leu Thr Val Ser Leu Gly Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Ala Thr Gln Gly Thr Val Asp Lys Asp Ala Gln Ile Thr Gln Asp
 20 25 30
 Trp Ser Val Glu Lys Leu Tyr Ala Glu Ala Gln Asp Glu Leu Asn Ser
 35 40 45
 Ser Asn Tyr Thr Arg Ala Val Lys Leu Tyr Glu Ile Leu Glu Ser Arg
 50 55 60
 Phe Pro Thr Ser Arg His Ala Gln Gln Ser Gln Leu Asp Thr Ala Tyr
 65 70 75 80
 Ala Tyr Tyr Lys Asp Asp Glu Lys Asp Lys Ala Leu Ala Ala Ile Asp
 85 90 95
 Arg Phe Arg Arg Leu His Pro Gln His Pro Asn Met Asp Tyr Ala Leu
 100 105 110
 Tyr Leu Arg Gly Leu Val Leu Phe Asn Glu Asp Gln Ser Phe Leu Asn
 115 120 125
 Lys Leu Ala Ser Gln Asp Trp Ser Asp Arg Asp Pro Lys Ala Asn Arg
 130 135 140
 Glu Ala Tyr Gln Ala Phe Ala Glu Leu Val Gln Arg Phe Pro Asn Ser
 145 150 155 160
 Lys Tyr Ala Ala Asp Ala Thr Ala Arg Met Val Lys Leu Val Asp Ala
 165 170 175
 Leu Gly Gly Asn Glu Met Ser Val Ala Arg Tyr Tyr Met Lys Arg Gly
 180 185 190
 Ala Tyr Ile Ala Ala Ala Asn Arg Ala Gln Lys Ile Ile Gly Ser Tyr
 195 200 205
 Gln Asn Thr Arg Tyr Val Glu Glu Ser Leu Ala Ile Leu Glu Leu Ala
 210 215 220
 Tyr Lys Lys Leu Asp Lys Pro Arg Leu Ala Ala Asp Thr Arg Arg Val
 225 230 235 240
 Leu Glu Thr Asn Phe Pro Lys Ser Pro Phe Leu Lys Gln Pro Trp Arg
 245 250 255
 Ser Asp Asp Met Pro Trp Trp Arg Tyr Trp His
 260 265

<210> 72
 <211> 294
 <212> PRT
 <213> Neisseria meningitidis

<400> 72
 Met Ser Ser Gly Asn Ile His Ile His Ser Met Thr Gly Phe Ala Asn
 1 5 10 15
 Ala Ala Ala Glu Cys Gly Ser Lys Arg Ile Asn Leu Asp Leu Arg Ala
 20 25 30
 Val Asn His Arg Phe Leu Asp Ile Gln Ile Arg Met Pro Asp Asp Leu
 35 40 45
 Arg Tyr Leu Glu Ser Gly Ile Arg Glu Lys Ile Ser Ser His Ile Ala
 50 55 60
 Arg Gly Lys Val Glu Cys Lys Ile Gln Ile Gln Asp Ala Glu Asn Gly
 65 70 75 80
 Ser Gln Ser Leu Glu Leu Asn Arg Asp Leu Val Gly Gln Leu Ala Glu
 85 90 95
 Ile Asn Lys Asp Leu Arg Lys His His Asp Leu Ala Lys Leu Gly Val
 100 105 110
 Ala Asp Ile Leu Arg Phe Pro Gly Val Leu Ala Ser Gln Arg Glu Asn
 115 120 125
 Thr Glu Glu Leu Ala Lys Ser Ile Thr Glu Leu Thr Glu Lys Ala Leu
 130 135 140
 Lys Asp Phe Thr Ala Ala Arg Lys Arg Glu Gly Lys Lys Leu Gly Glu
 145 150 155 160
 His Leu Leu Gln Arg Leu Glu Ala Met Glu Glu Ile Ile Asp Ala Leu
 165 170 175
 Ser Glu Leu Phe Pro Thr Leu Leu Glu Thr His Lys Glu Lys Ile Arg
 180 185 190
 Ala Arg Leu Val Glu Ala Val Gly Ser Ile Asp Asn Asp Arg Leu Gln
 195 200 205
 Gln Glu Phe Ala Leu Phe Ile Gln Lys Ser Asp Ile Asp Glu Glu Phe
 210 215 220
 Ser Arg Leu Arg Thr His Ile Ala Glu Val Arg Arg Ile Val Thr Glu
 225 230 235 240
 His Lys Gly Ser Ser Gly Lys Arg Leu Asp Phe Leu Met Gln Glu Leu
 245 250 255
 Asn Arg Glu Ala Asn Thr Leu Gly Ser Lys Ser Ile Ala Ala Glu Cys
 260 265 270
 Thr Gln Ala Ser Val Glu Leu Lys Val Leu Ile Glu Gln Met Arg Glu
 275 280 285
 Gln Val Gln Asn Ile Glu
 290

<210> 73
 <211> 637
 <212> PRT
 <213> Neisseria meningitidis
 <400> 73

Met Leu Asn Ile Thr Leu Pro Asp Gly Ser Val Arg Gln Tyr Glu Ser
 1 5 10 15
 Pro Val Thr Val Ala Gln Ile Ala Ala Ser Ile Gly Ala Gly Leu Ala
 20 25 30
 Lys Ala Thr Val Ala Gly Arg Val Asn Gly Lys Leu Val Asp Ala Cys
 35 40 45
 Asp Pro Ile Val Glu Asp Ser Ala Val Gln Ile Ile Thr Pro Lys Asp
 50 55 60
 Gln Glu Gly Ile Glu Ile Ile Arg His Ser Cys Ala His Leu Val Gly
 65 70 75 80
 His Ala Val Lys Gln Leu Tyr Pro Asn Ala Lys Met Val Ile Gly Pro
 85 90 95
 Val Ile Glu Glu Gly Phe Tyr Tyr Asp Ile Ala Thr Glu Lys Pro Phe
 100 105 110
 Thr Pro Glu Asp Val Ala Ala Ile Glu Ala Arg Met Lys Glu Leu Ile
 115 120 125
 Ala Gln Asp Tyr Asp Val Val Lys Ile Met Thr Pro Arg Ala Glu Ala
 130 135 140
 Ile Lys Ile Phe Gln Glu Arg Gly Glu Glu Tyr Lys Leu Arg Leu Ile
 145 150 155 160
 Asp Asp Met Pro Glu Val Glu Ala Met Gly Met Tyr His His Gln Glu
 165 170 175
 Tyr Val Asp Met Cys Arg Gly Pro His Val Pro Asn Thr Arg Phe Leu
 180 185 190
 Lys Asn Phe Lys Leu Thr Lys Leu Ala Gly Ala Tyr Trp Arg Gly Asp
 195 200 205
 Ser Asn Asn Glu Met Leu Gln Arg Ile Tyr Gly Thr Ala Trp Ala Thr
 210 215 220
 Lys Asp Glu Leu Lys Ala Tyr Ile Gln Arg Ile Glu Glu Ala Glu Lys
 225 230 235 240
 Arg Asp His Arg Lys Leu Gly Lys Gln Leu Asp Leu Phe His Leu Gln
 245 250 255
 Asp Glu Ala Pro Gly Met Val Phe Trp His Pro Lys Gly Trp Ala Leu
 260 265 270
 Trp Gln Val Ile Glu Gln His Met Arg Lys Glu Leu Asn Ala Ala Gly
 275 280 285
 Tyr Lys Glu Val Lys Thr Pro Gln Ile Met Asp Lys Thr Phe Trp Glu
 290 295 300
 Lys Ser Gly His Trp Asp Asn Tyr Lys Asp Asn Met Phe Val Thr Ser
 305 310 315 320
 Ser Glu Lys Arg Glu Tyr Ala Val Lys Pro Met Asn Cys Pro Gly His
 325 330 335
 Val Gln Ile Phe Asn Asn Gly Leu Arg Ser Tyr Arg Asp Leu Pro Met

	340		345		350
Arg	Leu	Ala	Glu	Phe	Gly
	355				
Leu	His	Gly	Leu	Met	Arg
	370				
Ile	Phe	Cys	Thr	Glu	Asp
	385				
Glu	Leu	Leu	Ile	Arg	Ile
Val	Lys	Leu	Ser	Leu	Arg
Trp	Asp	Lys	Ala	Glu	Gln
Val	Glu	Trp	Gly	Glu	Leu
Ile	Glu	Tyr	His	Val	Arg
Thr	Leu	Gln	Leu	Asp	Phe
Val	Thr	Glu	Asn	Asn	Asp
Ile	Leu	Gly	Ser	Leu	Glu
Ala	Gly	Ser	Phe	Pro	Leu
Asn	Ile	Thr	Glu	Asn	Gln
Leu	Gln	Ala	Ala	Gly	Phe
Ile	Gly	Tyr	Lys	Ile	Arg
Ile	Val	Val	Gly	Asp	Lys
Arg	Lys	Ala	Glu	Asp	Leu
Gln	Leu	Gln	Gln	Glu	Ile

<210> 74
 <211> 330
 <212> PRT
 <213> Neisseria meningitidis

	74
Met	Glu
1	Asn
	Val
	Asn
	Arg
	Ile
	Val
	Ala
	Glu
	Gly
	Ile
	Ala
	Ala
	Val
	Glu
	15

Ala Ala Gln Asp Phe Asn Ala Leu Glu Gln Ile Lys Ala Arg Tyr Leu
 20 25 30
 Gly Lys Thr Gly Glu Leu Thr Gly Leu Leu Lys Thr Leu Gly Gln Met
 35 40 45
 Ser Pro Glu Glu Arg Lys Thr Ile Gly Ala His Ile Asn Glu Cys Lys
 50 55 60
 Asn Arg Phe Gln Thr Ala Phe Asn Ala Lys Arg Glu Ala Leu Asn Glu
 65 70 75 80
 Val Lys Leu Gln Ala Arg Leu Ala Ala Glu Ala Leu Asp Ile Thr Leu
 85 90 95
 Pro Gly Arg Ala Gln Glu Gly Gly Ser Leu His Pro Val Thr Leu Thr
 100 105 110
 Leu Gln Arg Val Val Glu Leu Phe His Gly Met Gly Phe Glu Val Ala
 115 120 125
 Asp Gly Pro Glu Ile Glu Asp Asp Phe His Asn Phe Gln Ala Leu Asn
 130 135 140
 Ile Pro Ala Asn His Pro Ala Arg Ala Met Gln Asp Thr Phe Tyr Val
 145 150 155 160
 Glu Asn Gly Asp Val Leu Arg Thr His Thr Ser Pro Ile Gln Ile Arg
 165 170 175
 Tyr Met Leu Asp Lys Lys Glu Pro Pro Ile Arg Ile Ile Ala Pro Gly
 180 185 190
 Arg Val Tyr Arg Val Asp Ser Asp Ala Thr His Ser Pro Met Phe His
 195 200 205
 Gln Ala Glu Gly Leu Trp Val Glu Glu Gly Val Thr Phe Ala Asp Leu
 210 215 220
 Lys Ala Val Phe Thr Asp Phe Ile Arg Arg Phe Phe Glu Arg Asp Asp
 225 230 235 240
 Leu Gln Val Arg Phe Arg Pro Ser Phe Phe Pro Phe Thr Glu Pro Ser
 245 250 255
 Ala Glu Ile Asp Ile Met Gly Glu Asn Gly Lys Trp Leu Glu Val Gly
 260 265 270
 Gly Cys Gly Met Val His Pro Asn Val Leu Lys Asn Val Asn Ile Asp
 275 280 285
 Pro Glu Lys Tyr Thr Gly Phe Ala Phe Gly Ile Gly Leu Asp Arg Phe
 290 295 300
 Ala Met Leu Arg Tyr Asn Val Asn Asp Leu Arg Leu Phe Phe Asp Asn
 305 310 315 320
 Asp Leu Asn Phe Leu Lys Gln Phe Ala Lys
 325 330

<210> 75
 <211> 787
 <212> PRT

<213> *Neisseria meningitidis*

<400> 75

Met Gln Phe Ser Tyr Ser Trp Leu Lys Thr Gln Ala Asp Thr Glu Leu
 1 5 10 15
 Ser Ser Asp Lys Leu Glu His Leu Leu Thr Met Ser Gly Leu Glu Val
 20 25 30
 Glu Glu Ala Glu Thr Ala Ala Pro Ala Phe Ala Gly Val Val Ile Ala
 35 40 45
 Glu Val Lys Ser Val Glu Lys His Pro Asp Ala Asp Arg Leu Asn Val
 50 55 60
 Thr Arg Val Asp Ala Gly Thr Gly Gly Leu Val Gln Ile Val Cys Gly
 65 70 75 80
 Ala Pro Asn Val Lys Ala Gly Ile Lys Val Pro Cys Ser Leu Pro Gly
 85 90 95
 Ala Val Leu Pro Gly Asn Phe Lys Ile Lys Pro Thr Lys Met Arg Gly
 100 105 110
 Glu Val Ser Asp Gly Met Leu Cys Ser Thr Asp Glu Leu Gly Leu Pro
 115 120 125
 Asp Asp Gly Val Asn Gly Leu His Ile Leu Pro Glu Asp Ala Pro Val
 130 135 140
 Gly Thr Asn Ile Arg Glu Tyr Leu Asp Leu Asp Asp Thr Leu Phe Thr
 145 150 155 160
 Leu Lys Ile Thr Pro Asn Arg Ala Asp Cys Leu Ser Ile Lys Gly Ile
 165 170 175
 Ala Arg Glu Val Ser Ala Leu Thr Gly Cys Ala Phe Arg Gln Pro Glu
 180 185 190
 Ile His Thr Ala Pro Ile Thr Gly Ser Arg Lys Gln Pro Val Gln Ile
 195 200 205
 Asn Ala Pro Ala Asp Cys Gly Arg Phe Ile Ser Arg Val Ile Glu Asn
 210 215 220
 Val Asn Ala Arg Ala Thr Thr Pro Asp Trp Met Lys Gln Arg Leu Glu
 225 230 235 240
 Arg Ser Gly Ile Arg Ser Ile Ser Ala Leu Val Asp Ile Gly Asn Tyr
 245 250 255
 Val Met Leu Glu Ile Gly Gln Pro Met His Val Phe Asp Ala Asp Lys
 260 265 270
 Leu Ser Gly Ser Leu His Ile Arg Arg Ala Arg Glu Gly Glu Thr Leu
 275 280 285
 Glu Cys Leu Asn Glu Lys Thr Val Ser Leu Ser Glu Asn Thr Leu Val
 290 295 300
 Val Ala Asp Glu Lys Gly Val Leu Ser Leu Ala Gly Leu Met Gly Gly
 305 310 315 320
 Ala Ala Ser Ala Val Ser Asp Gly Thr Gln Asn Ile Val Leu Glu Ala

95															
325								330				335			
Ala	Trp	Phe	Ala 340	Pro	Glu	Ile	Ile	Ala 345	Gly	Lys	Ser	Arg	Gln 350	Tyr	Gly
Phe	Gly	Ser 355	Asp	Ser	Ser	Phe	Arg 360	Phe	Glu	Arg	Gly	Val 365	Asp	Tyr	Arg
Leu	Gln 370	Ala	Asp	Ala	Ile	Glu 375	Arg	Ala	Thr	Glu	Leu 380	Val	Leu	Gln	Ile
Cys 385	Gly	Gly	Ala	Ala	Gly 390	Glu	Met	Val	Glu	Ala 395	Gln	Gly	Glu	Leu	Pro 400
Glu	Ala	Lys	Gln	Val 405	Gly	Leu	Arg	Leu	Asp 410	Arg	Leu	Lys	Thr	Val 415	Leu
Gly	Val	Asp	Ile 420	Pro	Ala	Glu	Gln	Val 425	Glu	Thr	Ile	Leu	Gln 430	His	Leu
Gly	Leu	Gln 435	Pro	Glu	Lys	Thr	Ala 440	Glu	Gly	Phe	Arg	Val 445	Thr	Ala	Pro
Ser	Phe 450	Arg	Phe	Asp	Ile	Glu 455	Ile	Glu	Ala	Asp	Leu 460	Ile	Glu	Glu	Ile
Gly 465	Arg	Val	Tyr	Gly	Tyr 470	Glu	Asn	Ile	Pro	Asp 475	Asp	Tyr	Thr	Ser	Gly 480
Arg	Leu	Lys	Met	Leu 485	Glu	Leu	Pro	Glu	Thr 490	Arg	Arg	Pro	Arg	Phe 495	Ala
Val	Tyr	Asn	Glu 500	Met	Ala	Ala	Arg	Gly 505	Tyr	Arg	Glu	Val	Val 510	Ser	Tyr
Ala	Phe	Val 515	Asp	Glu	Gln	Trp	Glu 520	Gln	Asp	Phe	Ala	Ala 525	Asn	Ala	Asp
Pro	Ile 530	Arg	Leu	Gln	Asn	Pro 535	Leu	Ala	Ala	Gln	Tyr 540	Ala	Val	Met	Arg
Ser 545	Thr	Leu	Ile	Gly	Gly 550	Leu	Val	Glu	Ile	Leu 555	Gln	Asn	Asn	Leu	Asn 560
Arg	Lys	Gln	Asn	Arg 565	Val	Cys	Val	Phe	Glu 570	Ile	Ala	Arg	Val	Phe 575	Ser
Lys	Gly	Ser	Asp 580	Gly	Gln	Phe	Val	Gln 585	Asn	Glu	Arg	Ile	Gly 590	Gly	Leu
Trp	Tyr	Gly 595	Ala	Val	Met	Pro	Glu 600	Gln	Trp	Gly	Gly	Lys 605	Thr	Arg	Asn
Ala	Asp 610	Phe	Tyr	Asp	Ile	Lys 615	Ala	Asp	Val	Glu	Asn 620	Leu	Leu	Lys	Asn
Lys 625	Ala	Val	Glu	Phe	Val 630	Lys	Thr	Gly	His	Pro 635	Ala	Leu	His	Pro	Gly 640
Arg	Ala	Ala	Asn	Ile 645	Val	Ser	Asp	Gly	Lys 650	Val	Ile	Gly	Phe	Val 655	Gly
Glu	Leu	His	Pro 660	Lys	Trp	Leu	Gln	Lys 665	Tyr	Asp	Leu	Pro	Gln 670	Ala	Pro

Leu Val Phe Glu Ile Asp Met Ala Ala Val Leu Glu Cys Gly Lys Thr
 675 680 685
 Arg Tyr Arg Val Val Ser Lys Phe Gln Pro Val Arg Arg Asp Leu Ala
 690 695 700
 Phe Val Met Pro Glu Ala Met Ser His Asp Asp Leu Leu Leu Val Leu
 705 710 715 720
 Lys Gly Ala Ala Asn Lys Leu Val Gln Glu Ile Ser Val Phe Asp Val
 725 730 735
 Tyr Arg Gly Thr Gly Leu Pro Glu Gly Met Lys Ser Val Ala Val Lys
 740 745 750
 Val Ile Leu Gln Asp Met Glu Asn Thr Leu Thr Asp Glu Ala Val Glu
 755 760 765
 Pro Leu Ile Gly Lys Leu Ile Gly Ala Ala Thr Ala Ala Gly Ala Arg
 770 775 780
 Leu Arg Ser
 785

<210> 76
 <211> 245
 <212> PRT
 <213> Neisseria meningitidis

<400> 76
 Met Gly Gly Gln Lys Thr His Phe Gly Phe Ser Thr Val Asn Glu Asp
 1 5 10 15
 Glu Lys Ala Gly Lys Val Ala Glu Val Phe His Ser Val Ala Lys Asn
 20 25 30
 Tyr Asp Ile Met Asn Asp Val Met Ser Ala Gly Leu His Arg Val Trp
 35 40 45
 Lys His Phe Thr Ile Asn Thr Ala His Leu Lys Lys Gly Asp Lys Val
 50 55 60
 Leu Asp Ile Ala Gly Gly Thr Gly Asp Leu Ser Arg Gly Trp Ala Lys
 65 70 75 80
 Arg Val Gly Lys Glu Gly Glu Val Trp Leu Thr Asp Ile Asn Ser Ser
 85 90 95
 Met Leu Thr Val Gly Arg Asp Arg Leu Leu Asn Glu Gly Met Ile Leu
 100 105 110
 Pro Val Ser Leu Ala Asp Ala Glu Lys Leu Pro Phe Pro Asp Asn Tyr
 115 120 125
 Phe Asn Leu Val Ser Val Ala Phe Gly Leu Arg Asn Met Thr His Lys
 130 135 140
 Asp Ala Ala Leu Lys Glu Met Tyr Arg Val Leu Lys Pro Gly Gly Thr
 145 150 155 160
 Leu Leu Val Leu Glu Phe Ser Lys Ile Tyr Lys Pro Leu Glu Gly Ala
 165 170 175

Tyr Asp Phe Tyr Ser Phe Lys Leu Leu Pro Val Met Gly Arg Leu Ile
 180 185 190
 Ala Lys Asp Ala Glu Ser Tyr Gln Tyr Leu Ala Glu Ser Ile Arg Met
 195 200 205
 His Pro Asp Gln Glu Thr Leu Lys Gln Met Met Leu Asp Ala Gly Phe
 210 215 220
 Asp Ser Val Asp Tyr His Asn Met Ser Ala Gly Ile Val Ala Leu His
 225 230 235 240
 Lys Gly Val Lys Phe
 245

<210> 77
 <211> 287
 <212> PRT
 <213> Neisseria meningitidis

<400> 77
 Met Ser Glu Ile Gly Leu Val Lys Ile Tyr Phe Gly Lys Val Arg Asp
 1 5 10 15
 Leu Tyr Glu Ile Asp Asp Lys Arg Met Leu Met Val Ala Ser Asp Arg
 20 25 30
 Leu Ser Ala Phe Asp Val Ile Leu Asp Asp Pro Ile Pro Ser Lys Gly
 35 40 45
 Glu Ile Leu Thr Gln Ile Ser Asn Phe Trp Phe Lys Lys Leu Ala His
 50 55 60
 Ile Met Pro Asn His Phe Thr Gly Gln Thr Val Tyr Asp Val Leu Pro
 65 70 75 80
 Glu Asn Glu Ala Lys Ala Leu Glu Lys Arg Ala Val Val Ala Lys Lys
 85 90 95
 Leu Thr Pro Val Lys Val Glu Ala Ile Val Arg Gly Tyr Leu Ala Gly
 100 105 110
 Ser Gly Trp Lys Asp Tyr Gln Lys Thr Gly Ser Val Cys Gly Ile Gln
 115 120 125
 Leu Pro Glu Gly Met Gln Glu Ala Gln Gln Leu Pro Glu Val Ile Phe
 130 135 140
 Thr Pro Ser Thr Lys Ala Ala Val Gly Asp His Asp Glu Asn Ile Ser
 145 150 155 160
 Phe Glu Glu Cys Gly Arg Ile Ile Gly Lys Glu Leu Ala Glu Glu Val
 165 170 175
 Arg Ala Lys Ala Val Arg Leu Tyr Thr Glu Ala Ala Glu Tyr Ala Lys
 180 185 190
 Ser Arg Gly Ile Ile Ile Cys Asp Thr Lys Phe Glu Phe Gly Leu Asp
 195 200 205
 Glu Asn Gly Thr Leu Thr Leu Met Asp Glu Val Leu Thr Pro Asp Ser
 210 215 220
 Ser Arg Phe Trp Pro Ala Asp Gln Tyr Lys Val Gly Thr Asn Pro Pro

								98							
225				230				235				240			
Ser	Phe	Asp	Lys	Gln 245	Phe	Val	Arg	Asp	Trp 250	Leu	Glu	Gln	Ser	Gly 255	Trp
Asn	Lys	Lys	Ala 260	Pro	Ala	Pro	Lys	Val 265	Pro	Ala	Asp	Val	Ile 270	Gln	Lys
Thr	Val	Glu 275	Lys	Tyr	Arg	Glu	Ala 280	Leu	Thr	Leu	Leu	Thr 285	Gln	Asp	
<210>		78													
<211>		707													
<212>		PRT													
<213>		Neisseria meningitidis													
<400>		78													
Met 1	Met	Phe	Asp	Lys 5	His	Val	Lys	Thr	Phe 10	Gln	Tyr	Gly	Asn	Gln 15	Thr
Val	Thr	Leu	Glu 20	Thr	Gly	Glu	Ile	Ala 25	Arg	Gln	Ala	Ala	Ala 30	Ala	Val
Lys	Val	Ser 35	Met	Gly	Asp	Thr	Val 40	Val	Leu	Val	Ala	Val 45	Thr	Thr	Asn
Lys	Glu 50	Val	Lys	Glu	Gly	Gln 55	Asp	Phe	Phe	Pro	Leu 60	Thr	Val	Asp	Tyr
Leu 65	Glu	Arg	Thr	Tyr	Ala 70	Ala	Gly	Lys	Ile	Pro 75	Gly	Gly	Phe	Phe	Lys 80
Arg	Glu	Gly	Lys	Gln 85	Ser	Glu	Lys	Glu	Ile 90	Leu	Thr	Ser	Arg	Leu 95	Ile
Asp	Arg	Pro	Ile 100	Arg	Pro	Leu	Phe	Pro 105	Glu	Gly	Phe	Tyr	His 110	Asp	Ile
Gln	Ile	Val 115	Ala	Met	Val	Val	Ser 120	Val	Asp	Pro	Glu	Ile 125	Asp	Ser	Asp
Ile	Pro 130	Ala	Met	Leu	Gly	Ala 135	Ser	Ala	Ala	Leu	Val 140	Leu	Ser	Gly	Val
Pro 145	Phe	Ala	Gly	Pro	Ile 150	Gly	Ala	Ala	Arg	Val 155	Gly	Tyr	Val	Asn	Gly 160
Val	Tyr	Val	Leu	Asn 165	Pro	Thr	Lys	Ala	Glu 170	Leu	Ala	Lys	Ser	Gln 175	Leu
Asp	Leu	Val	Val 180	Ala	Gly	Thr	Ser	Lys 185	Ala	Val	Leu	Met	Val 190	Glu	Ser
Glu	Ala	Lys 195	Ile	Leu	Pro	Glu	Asp 200	Val	Met	Leu	Gly	Ala 205	Val	Val	Tyr
Gly	His 210	Asp	Gln	Met	Gln	Val 215	Ala	Ile	Asn	Ala	Ile 220	Asn	Glu	Phe	Ala
Asp 225	Glu	Val	Asn	Pro	Glu 230	Leu	Trp	Asp	Trp	Lys 235	Ala	Pro	Glu	Thr	Asn 240
Glu	Glu	Leu	Val	Ala 245	Lys	Val	Arg	Gly	Ile 250	Ala	Gly	Glu	Thr	Ile 255	Lys

Glu Ala Phe Lys Ile Arg Gln Lys Gln Ala Arg Ser Ala Lys Leu Asp
 260 265 270
 Glu Ala Trp Ser Ala Val Lys Glu Ala Leu Ile Thr Glu Glu Thr Asp
 275 280 285
 Thr Leu Ala Ala Asn Glu Ile Lys Gly Ile Phe Lys His Leu Glu Ala
 290 295 300
 Asp Val Val Arg Ser Gln Ile Leu Asp Gly Gln Pro Arg Ile Asp Gly
 305 310 315 320
 Arg Asp Thr Arg Thr Val Arg Pro Leu Asn Ile Gln Thr Ser Val Leu
 325 330 335
 Pro Arg Thr His Gly Ser Ala Leu Phe Thr Arg Gly Glu Thr Gln Ala
 340 345 350
 Leu Ala Val Ala Thr Leu Gly Thr Ser Arg Asp Glu Gln Ile Ile Asp
 355 360 365
 Ala Leu Ser Gly Glu Tyr Thr Asp Arg Phe Met Leu His Tyr Asn Phe
 370 375 380
 Pro Pro Tyr Ser Thr Gly Glu Val Gly Arg Met Gly Ala Pro Lys Arg
 385 390 395 400
 Arg Glu Ile Gly His Gly Arg Leu Ala Lys Arg Ala Leu Leu Ala Val
 405 410 415
 Leu Pro Lys Pro Glu Asp Phe Ser Tyr Thr Met Arg Val Val Ser Glu
 420 425 430
 Ile Thr Glu Ser Asn Gly Ser Ser Ser Met Ala Ser Val Cys Gly Gly
 435 440 445
 Cys Leu Ser Leu Leu Ser Ala Gly Val Pro Leu Lys Ala His Val Ala
 450 455 460
 Gly Ile Ala Met Gly Leu Ile Leu Glu Gly Asn Lys Phe Ala Val Leu
 465 470 475 480
 Thr Asp Ile Leu Gly Asp Glu Asp His Leu Gly Asp Met Asp Phe Lys
 485 490 495
 Val Ala Gly Thr Thr Glu Gly Val Thr Ala Leu Gln Met Asp Ile Lys
 500 505 510
 Ile Gln Gly Ile Thr Lys Glu Ile Met Gln Ile Ala Leu Ala Gln Ala
 515 520 525
 Lys Glu Ala Arg Leu His Ile Leu Asp Gln Met Lys Ala Ala Val Ala
 530 535 540
 Gly Pro Gln Glu Leu Ser Ala His Ala Pro Arg Leu Phe Thr Met Lys
 545 550 555 560
 Ile Asn Gln Asp Lys Ile Arg Glu Val Ile Gly Lys Gly Gly Glu Thr
 565 570 575
 Ile Arg Ser Ile Thr Ala Glu Thr Gly Thr Glu Ile Asn Ile Ala Glu
 580 585 590

Asp Gly Thr Ile Thr Ile Ala Ala Thr Thr Gln Glu Ala Gly Asp Ala
 595 600 605
 Ala Lys Lys Arg Ile Glu Gln Ile Thr Ala Glu Val Glu Val Gly Lys
 610 615 620
 Val Tyr Glu Gly Thr Val Val Lys Ile Leu Asp Asn Asn Val Gly Ala
 625 630 635 640
 Ile Val Ser Val Met Pro Gly Lys Asp Gly Leu Val His Ile Ser Gln
 645 650 655
 Ile Ala His Glu Arg Val Arg Asn Val Gly Asp Tyr Leu Gln Val Gly
 660 665 670
 Gln Val Val Asn Val Lys Ala Leu Glu Val Asp Asp Arg Gly Arg Val
 675 680 685
 Arg Leu Ser Ile Lys Ala Leu Leu Asp Ala Pro Ala Arg Glu Glu Asn
 690 695 700
 Ala Ala Glu
 705

<210> 79
 <211> 310
 <212> PRT
 <213> Neisseria meningitidis

<400> 79
 Met Lys Ile Ala Asn Ser Ile Thr Glu Leu Ile Gly Asn Thr Pro Leu
 1 5 10 15
 Val Lys Leu Asn Arg Leu Thr Glu Gly Leu Lys Ala Glu Val Ala Val
 20 25 30
 Lys Leu Glu Phe Phe Asn Pro Gly Ser Ser Val Lys Asp Arg Ile Ala
 35 40 45
 Glu Ala Met Ile Glu Gly Ala Glu Lys Ala Gly Lys Ile Asn Lys Asn
 50 55 60
 Thr Val Ile Val Glu Ala Thr Ser Gly Asn Thr Gly Val Gly Leu Ala
 65 70 75 80
 Met Val Cys Ala Ala Arg Gly Tyr Lys Leu Ala Ile Thr Met Pro Glu
 85 90 95
 Ser Met Ser Lys Glu Arg Lys Met Leu Leu Arg Ala Phe Gly Ala Glu
 100 105 110
 Leu Ile Leu Thr Pro Ala Ala Glu Gly Met Ala Gly Ala Ile Ala Lys
 115 120 125
 Ala Lys Ser Leu Val Asp Ala His Pro Asp Thr Tyr Phe Met Pro Arg
 130 135 140
 Gln Phe Asp Asn Glu Ala Asn Pro Glu Val His Arg Lys Thr Thr Ala
 145 150 155 160
 Glu Glu Ile Trp Arg Asp Thr Asp Gly Lys Val Asp Val Phe Val Ala
 165 170 175
 Gly Val Gly Thr Gly Gly Thr Ile Thr Gly Val Gly Glu Val Leu Lys

										101					
		180						185				190			
Lys	Tyr	Lys	Pro	Glu	Val	Lys	Val	Val	Ala	Val	Glu	Pro	Glu	Ala	Ser
		195					200				205				
Pro	Val	Leu	Ser	Gly	Gly	Glu	Lys	Gly	Pro	His	Pro	Ile	Gln	Gly	Ile
	210					215					220				
Gly	Ala	Gly	Phe	Ile	Pro	Thr	Val	Leu	Asn	Thr	Lys	Ile	Tyr	Asp	Ser
225					230					235					240
Ile	Thr	Lys	Val	Ser	Asn	Glu	Ala	Ala	Phe	Glu	Thr	Ala	Arg	Ala	Ile
				245					250					255	
Ala	Glu	Lys	Glu	Gly	Ile	Leu	Val	Gly	Ile	Ser	Ser	Gly	Ala	Ala	Val
			260					265					270		
Trp	Ser	Ala	Leu	Gln	Leu	Ala	Lys	Gln	Pro	Glu	Asn	Glu	Gly	Lys	Leu
		275					280					285			
Ile	Val	Val	Leu	Leu	Pro	Ser	Tyr	Gly	Glu	Arg	Tyr	Leu	Ser	Thr	Pro
	290					295					300				
Leu	Phe	Ala	Asp	Leu	Ala										
305					310										

<210> 80
 <211> 424
 <212> PRT
 <213> Neisseria meningitidis

<400>	80														
Met	Pro	Ser	Glu	Thr	Ser	Ser	Pro	Arg	Lys	Glu	Asn	Glu	Thr	Glu	Val
1				5					10					15	
His	Ile	Pro	Ala	Ala	Pro	Phe	Ile	Val	Lys	Gln	Ser	Gly	Ser	Asn	Ala
			20					25					30		
Leu	Ala	Val	Cys	Ala	Leu	Val	Leu	Ala	Ala	Leu	Gly	Leu	Gly	Thr	Ser
		35					40					45			
Gly	Phe	Leu	Phe	Val	Gln	Gly	Gln	Asn	Val	Leu	Lys	Asn	Gln	Glu	Leu
	50					55					60				
Ala	Phe	Asn	Gln	Lys	Ile	Asp	Lys	Ala	Ala	Leu	Gly	Glu	Ser	Glu	Asn
65					70					75					80
Ala	Ala	Leu	Leu	Lys	Asp	Asn	Leu	Asn	Arg	Gln	Ala	Ala	Ile	Gln	Ser
				85					90					95	
Glu	Leu	Asp	Arg	Leu	Asp	Gly	Asn	Val	Lys	Ala	Asn	Gly	Glu	Gln	Ile
			100					105					110		
Leu	Glu	Met	Gln	Lys	Ser	Tyr	Arg	Glu	Leu	Thr	Lys	Gly	Arg	Ala	Asp
		115					120					125			
Trp	Leu	Val	Asp	Glu	Thr	Glu	Thr	Ile	Leu	Asn	Leu	Ala	Ala	Gln	Gln
	130					135					140				
Leu	Val	Leu	Thr	Gly	Asn	Ile	Gln	Thr	Ala	Val	Gly	Val	Leu	Glu	His
145					150					155					160
Ile	Asp	Ser	Arg	Leu	Ser	Arg	Phe	Asn	Gln	Ala	Glu	Leu	Leu	Pro	Ile
				165					170					175	

Lys Gln Ala Val Ser Ser Asp Leu Ala Glu Leu Lys Asn Arg Pro Tyr
 180 185 190
 Val Asp Ile Ser Gly Thr Ala Leu Arg Leu Asp Arg Leu Glu Thr Ala
 195 200 205
 Val Ser Gly Leu Pro Leu Met Leu Asp Gly Val Leu Lys Pro Gly Val
 210 215 220
 Gln Val Lys Asn Glu Ala Ala Ser Ala Ser Trp Trp Gln Asn Val Trp
 225 230 235 240
 Glu Lys Ser Leu Gly Thr Leu Lys Gly Leu Val Glu Ile Arg Arg Leu
 245 250 255
 Glu Asn Asn Asp Ala Met Leu Ile Ser Pro Glu Gln Ala Tyr Phe Val
 260 265 270
 Arg Glu Asn Leu Arg Leu Arg Leu Leu Asp Ala Arg Thr Ala Leu Met
 275 280 285
 Gln Arg Asn Ser Glu Val Tyr Gln Gly Asp Leu Asn Asn Ala Glu Ala
 290 295 300
 Ala Val Arg Gln Tyr Phe Asp Ala Lys Ser Pro Ala Thr Gln Ser Trp
 305 310 315 320
 Leu Lys Glu Leu Ala Glu Leu Lys Ala Leu Asp Val Arg Met Thr Ala
 325 330 335
 Asp Asp Gly Leu Lys Asn Ser Leu Asn Ala Val Arg Ala Tyr Arg Asp
 340 345 350
 Gly Thr Arg Met Thr Ala Ala Glu Asn Gln Glu Ala Glu Gln Ala Ala
 355 360 365
 Ser Glu Pro Ala Asn Glu Lys Thr Ala Ser Glu Pro Ala Ala Ala Ser
 370 375 380
 Asp Val Lys Thr Ile Glu Ala Pro Ser Leu Pro Ser Glu Arg Lys Pro
 385 390 395 400
 Glu Gln Pro Ala Lys Lys Gln Thr Val Pro Glu Lys Ala Gly Arg Ser
 405 410 415
 Pro Ser Ala Lys Gly Glu Arg Ala
 420

<210> 81
 <211> 169
 <212> PRT
 <213> Neisseria meningitidis

<400> 81
 Met Ile Ile Leu His Thr Asn Lys Gly Asp Ile Lys Ile Glu Leu Asp
 1 5 10 15
 Phe Asp Lys Ala Pro Val Thr Ala Lys Asn Phe Glu Gln Tyr Val Lys
 20 25 30
 Asp Gly Phe Tyr Asp Gly Val Ile Phe His Arg Val Ile Lys Gly Phe
 35 40 45

Met Ile Gln Gly Gly Gly Met Asp Glu Asn Met Asn Glu Lys Glu Thr
 50 55 60
 Arg Asp Pro Ile Gln Asn Glu Ala Ser Asn Gly Leu Pro Asn Asp Lys
 65 70 75 80
 Tyr Thr Ile Ala Met Ala Arg Thr Ser Asp Pro His Ser Ala Ser Ala
 85 90 95
 Gln Phe Phe Ile Asn Thr Ala Asp Asn Ala Phe Leu Asn Phe Arg Ser
 100 105 110
 Lys Glu Leu Tyr Gly Lys Thr Val Val Gln Asp Trp Gly Tyr Ala Val
 115 120 125
 Phe Gly Lys Val Val Asp Gly Phe Asp Val Val Asp Ala Ile Glu Gly
 130 135 140
 Val Ser Thr Lys Arg His Gly Tyr His Asp Asp Val Pro Ser Glu Pro
 145 150 155 160
 Val Val Ile Ile Lys Ala Glu Ala Val
 165

<210> 82
 <211> 221
 <212> PRT
 <213> Neisseria meningitidis

<400> 82
 Met Thr Val Leu Ser Lys Glu Gln Val Leu Ser Ala Phe Lys Asn Arg
 1 5 10 15
 Lys Ser Cys Arg His Tyr Asp Ala Ala Arg Lys Ile Ser Ala Glu Asp
 20 25 30
 Phe Gln Phe Ile Leu Glu Leu Gly Arg Leu Ser Pro Ser Ser Val Gly
 35 40 45
 Ser Glu Pro Trp Gln Phe Ile Val Val Gln Asn Pro Glu Ile Arg Gln
 50 55 60
 Ala Ile Lys Pro Phe Ser Trp Gly Met Ala Asp Ala Leu Asp Thr Ala
 65 70 75 80
 Ser His Leu Val Val Phe Leu Ala Lys Lys Asn Ala Arg Ser Asp Ser
 85 90 95
 Pro Phe Met Leu Glu Ser Leu Lys Arg Arg Gly Val Thr Glu Pro Asp
 100 105 110
 Ala Val Ala Lys Ser Leu Ala Arg Tyr Gln Ala Phe Gln Ala Asp Asp
 115 120 125
 Ile Lys Ile Leu Asp Asp Ser Arg Ala Leu Phe Asp Trp Cys Cys Arg
 130 135 140
 Gln Thr Tyr Ile Ala Leu Ala Asn Met Met Thr Gly Ala Ala Met Ala
 145 150 155 160
 Gly Ile Asp Ser Cys Pro Val Glu Gly Phe Asn Tyr Ala Glu Met Glu
 165 170 175
 Arg Ile Leu Ser Gly Gln Phe Gly Leu Phe Asp Ala Ala Glu Trp Gly

180 185 104 190
 Val Ser Val Ala Ala Thr Phe Gly Tyr Arg Val Gln Glu Ile Ala Thr
 195 200 205
 Lys Ala Arg Arg Pro Leu Glu Glu Thr Val Ile Trp Ala
 210 215 220
 <210> 83
 <211> 383
 <212> PRT
 <213> Neisseria meningitidis
 <400> 83
 Met Gln Thr Trp Gln Leu Pro Glu His Ile Ala Asp Val Leu Pro Thr
 1 5 10 15
 Asn Ala Arg Gln Leu Glu Ser Ala Arg Glu Gln Leu Leu Ala Leu Phe
 20 25 30
 Arg Val His Gly Tyr Glu Leu Val Gln Pro Pro Leu Met Glu Tyr Ala
 35 40 45
 His Ser Leu Leu Thr His Ile Asp Ala Gly Leu Ser Leu Lys Thr Ile
 50 55 60
 Leu Val Thr Asp Arg Leu Ser Gly Arg Gln Leu Gly Ile Arg Ala Asp
 65 70 75 80
 Ile Thr Pro Gln Val Ala Arg Ile Asp Ala His Leu Leu Ser Ala Asn
 85 90 95
 Gln Gly Ile Asn Arg Leu Cys Tyr Ala Gly Pro Val Leu His Ala Gln
 100 105 110
 Pro Asp Gly Leu Leu Asn Met Arg Glu Pro Leu Gln Ala Gly Ala Glu
 115 120 125
 Met Tyr Gly Phe Ala Asp Ile Arg Gly Asp Ile Glu Leu Ile Asp Leu
 130 135 140
 Met Leu Lys Ser Met Lys Ile Ala Asp Met Gly Lys Val Leu Leu Ser
 145 150 155 160
 Leu Gly His Ile Gly Ile Phe Arg Ala Leu Ser Asp Ala Ala His Leu
 165 170 175
 Asp Ala Gly Gln Ser Ala Thr Leu Leu Ala Leu Met Gln Asp Lys Asp
 180 185 190
 Thr Gly Ala Val Glu Ala Gln Val Lys Ala Trp Lys Leu Asp Gly Met
 195 200 205
 Trp Ala Lys Ala Phe Ser Leu Leu Pro Arg Leu Tyr Gly Gly Arg Glu
 210 215 220
 Val Leu Ser Asp Ala Arg Gly Arg Leu Pro Asp Leu Ser Ala Val Gly
 225 230 235 240
 Gly Ala Leu Gly Glu Leu Gln Ala Val Cys Asp Ala Phe Pro Asp Cys
 245 250 255
 Glu Ile His Ile Asp Leu Ser Glu Leu Arg Val Asp Asn Tyr His Thr
 260 265 270

Gly Leu Leu Tyr Ala Ala Tyr Ala Ala Asp Phe His Asp Ala Val Ala
 275 280 285
 Arg Gly Gly Arg Tyr Asp Gly Leu Gly Gly Tyr Phe Gly Arg Ala Arg
 290 295 300
 Pro Ala Thr Gly Phe Ser Phe Asp Leu Arg Ser Phe Ile Gly Arg Leu
 305 310 315 320
 Pro Ala Ile Glu Arg Gln Pro Ala Val Leu Val Asp Ala Glu Asp Ala
 325 330 335
 Glu Ala Ala His Glu Ala Val Glu Ala Leu Arg Glu Gln Gly Gln Cys
 340 345 350
 Val Val Ile Asp Tyr Gly Ile Gly His Asn Val Ser Glu Glu Leu Ala
 355 360 365
 Gly Arg Leu Lys Lys Thr Asp Gly Val Trp Gln Val Val Lys Arg
 370 375 380

<210> 84
 <211> 434
 <212> PRT
 <213> Neisseria meningitidis

<400> 84
 Met Ala Met Ala Lys Asn Val Val Val Ile Gly Ala Gln Trp Gly Asp
 1 5 10 15
 Glu Gly Lys Gly Lys Ile Val Asp Trp Leu Ala Glu Glu Ala Gly Gly
 20 25 30
 Val Val Arg Phe Gln Gly Gly His Asn Ala Gly His Thr Leu Val Val
 35 40 45
 Gly Gly Lys Lys Thr Ile Leu Arg Leu Ile Pro Ser Gly Ile Leu His
 50 55 60
 Glu Ser Leu Asp Cys Phe Ile Gly Ser Gly Val Val Val Ser Pro Glu
 65 70 75 80
 Ala Leu Leu Gly Glu Ile Asp Glu Leu Asn Ala Ala Gly Val Lys Asn
 85 90 95
 Val Glu Gly Arg Leu Lys Ile Ala Pro Thr Cys Pro Leu Ile Leu Pro
 100 105 110
 Tyr His Ile Ala Leu Asp Gln Ala Arg Glu Ala Ser Arg Gly Lys Gly
 115 120 125
 Lys Ile Gly Thr Thr Gly Arg Gly Ile Gly Pro Ala Tyr Glu Asp Lys
 130 135 140
 Val Ala Arg Arg Ala Ile Arg Ala Ala Asp Leu Leu His Pro Glu Lys
 145 150 155 160
 Leu Arg Glu Lys Leu Asp Ala Val Leu Ala Tyr Tyr Asn Val Gln Leu
 165 170 175
 Gln His Leu His Asn Ala Glu Pro Val Lys Ala Glu Asp Val Met Ala
 180 185 190

val Ile Glu Lys val Ala Pro Arg Ile Ala Pro Met Ile Thr Asp Val
 195 200 205
 Ser Arg val Leu Asn Glu Lys Asn Lys Asn Gly Glu Lys Leu Leu Phe
 210 215 220
 Glu Gly Ala Gln Gly Ala Leu Leu Asp Ile Asp Tyr Gly Thr Tyr Pro
 225 230 235 240
 Phe val Thr Ser Ser Asn Cys Leu Ala Gly Ala Ala Ser Ala Gly Ala
 245 250 255
 Gly val Gly Pro Gln Met Leu Asp Tyr Val Leu Gly Ile val Lys Ala
 260 265 270
 Tyr Thr Thr Arg val Gly Ser Gly Pro Phe Pro Thr Glu Leu Phe Asp
 275 280 285
 Glu val Gly val Gly Leu Ala Glu Arg Gly His Glu Phe Gly Ser val
 290 295 300
 Thr Gly Arg Ala Arg Arg Cys Gly Trp Phe Asp Ala Ala Ala Leu Lys
 305 310 315 320
 Arg Ser Ile Gln Ile Asn Gly Ile Ser Gly Met Cys Ile Thr Lys Leu
 325 330 335
 Asp val Met Asp Gly val Glu Thr Ile Asn Ile Cys val Gly Tyr Glu
 340 345 350
 Leu Pro Asp Gly Gly Lys Thr Asp Ile Leu Pro Cys Gly Ser Asp Ala
 355 360 365
 val Glu Thr Cys Lys Pro Ile Tyr Glu Thr Met Pro Gly Trp Arg Glu
 370 375 380
 Ser Thr Phe Gly val Lys Asp Tyr Gly Ala Leu Pro Glu Asn Ala Lys
 385 390 395 400
 Ala Tyr Leu Lys Arg Ile Glu Glu val Cys Gly Ala Pro val Ala Ile
 405 410 415
 val Ser Thr Gly Pro Asp Arg Glu Glu Thr Ile val Leu His His Pro
 420 425 430
 Phe Ala

<210> 85
 <211> 334
 <212> PRT
 <213> Neisseria meningitidis

<400> 85
 Met Thr Ile Ile val Thr Gly Ala Ala Gly Phe Ile Gly Ser Asn Ile
 1 5 10 15
 val Lys Ala Leu Asn Gln Arg Gly Ile Thr Asp Ile val Ala val Asp
 20 25 30
 Asn Leu Ser Lys Gly Glu Lys Phe Lys Asn Leu Ala Glu Cys Glu Ile
 35 40 45
 Ala His Tyr Leu Asp Lys His Glu Phe Ile Arg Gln val Arg Glu His

50		55		107	60
Ile 65	Leu	Pro	Tyr	Gln	Asn 70
				Ile	Glu
				Ala	Val
				Phe 75	His
				Gln	Gly
				Ala	Cys 80
Ser	Asp	Thr	Met	Asn 85	His
				Asp	Gly
				Leu	Tyr 90
				Met	Met
				Asp	Asn 95
Gln	Tyr	Thr	Leu 100	Asp	Leu
				Leu	Asp
				Trp 105	Cys
				Gln	Asp
				Glu	Arg 110
				Ile	Pro
Phe	Leu	Tyr 115	Ala	Ser	Ser
				Ala 120	Val
				Tyr	Gly
				Lys	Gly 125
				Glu	Ile
				Phe	
Arg	Glu 130	Glu	Arg	Glu	Leu
				Glu 135	Lys
				Pro	Leu
				Asn	Val 140
				Tyr	Gly
				Tyr	Ser
Lys 145	Phe	Leu	Phe	Asp	Gln 150
				Val	Leu
				Arg	Arg
				Arg 155	Met
				Lys	Glu
				Gly	Gly 160
Thr	Ala	Gln	Val	Val 165	Gly
				Phe	Arg
				Tyr	Phe 170
				Asn	Val
				Tyr	Gly
				Gln 175	His
Glu	Gln	His	Lys 180	Gly	Arg
				Met	Ala
				Ser 185	Val
				Ala	Phe
				His	His 190
				Phe	His
Gln	Tyr	Arg 195	Glu	His	Gly
				Tyr	Val 200
				Asn	Leu
				Phe	Gly
				Ser 205	Asn
				Asp	Gly
Tyr	Gly 210	Asn	Gly	Glu	Gln
				Thr 215	Arg
				Asp	Phe
				Val 220	Ser
				Val	Glu
				Asp	Val
Ala 225	Lys	Val	Asn	Leu	Tyr 230
				Phe	Phe
				Asp	His
				Pro 235	Glu
				Leu	Ser
				Gly	Ile 240
Tyr	Asn	Leu	Gly 245	Thr	Gly
				Arg	Ser
				Gln 250	Gln
				Phe	Asn
				Glu	Leu
				Ala 255	Ala
Ala	Thr	Val	Asn 260	Ala	Cys
				Arg	Ala
				Ala 265	Glu
				Gly	Lys
				Pro	Glu
				Met	Ser
Leu	Lys	Glu 275	Leu	Val	Glu
				Glu 280	Leu
				Ile	Arg
				Tyr 285	Ile
				Pro	Phe
				Pro	
Asp	Ala 290	Leu	Lys	Gly	Lys
				Tyr 295	Gln
				Ser	Phe
				Thr	Gln 300
				Ala	Asp
				Ile	Thr
Lys 305	Leu	Arg	Glu	Ala	Gly 310
				Tyr	Lys
				Glu	Glu
				Phe 315	Phe
				Asp	Val
				Lys	Ser 320
Gly	Val	Asp	Arg	Tyr 325	Val
				Lys	Trp
				Met	Leu 330
				Glu	Asn
				Leu	Ala

<210> 86
 <211> 431
 <212> PRT
 <213> Neisseria meningitidis

<400>	86
Met 1	Ala
Gln	Lys
Ile 5	Gln
Ser	Val
Lys	Gly 10
Met	Asn
Asp	Leu
Leu 15	Pro
Val	Lys
Gln	Lys
Asp	Phe
Lys	Leu
Thr 25	Ala
Ala	Phe
Trp	Gln 30
Ala	Phe

Glu Asp Thr Val Gly Arg Trp Thr Arg Ala Tyr Gly Tyr Gln Gln Ile
 35 40 45
 Arg Thr Pro Ile Val Glu Gln Thr Gly Leu Phe Val Arg Ser Ile Gly
 50 55 60
 Glu Glu Thr Asp Val Val Gly Lys Glu Met Tyr Thr Phe Ser Asp Ser
 65 70 75 80
 Asn Asp Ser Leu Ser Leu Ser Leu Arg Pro Glu Gly Thr Ala Ser Cys
 85 90 95
 Leu Arg Ala Val Val Glu His Asn Leu Leu Tyr Asn Ser Pro Gln Lys
 100 105 110
 Leu Trp Tyr Met Gly Pro Met Phe Arg Arg Glu Arg Pro Gln Lys Gly
 115 120 125
 Arg Tyr Arg Gln Phe His Gln Val Gly Ile Glu Ala Leu Gly Phe Glu
 130 135 140
 Gly Pro Asp Ile Asp Ala Glu Ile Ile Ala Met Ser Ala Asp Leu Trp
 145 150 155 160
 Glu Lys Leu Gly Ile Arg Glu Tyr Leu Thr Leu Glu Ile Asn Ser Leu
 165 170 175
 Gly Asn Arg Glu Glu Arg Ala Ala His Arg Ala Ala Leu Val Glu Tyr
 180 185 190
 Leu Thr Arg Tyr Glu Asp Lys Leu Asp Glu Asp Ser Lys Arg Arg Leu
 195 200 205
 Lys Thr Asn Pro Leu Arg Val Leu Asp Thr Lys Asn Pro Asp Leu Gln
 210 215 220
 Glu Ile Cys Asn Ala Ala Pro Arg Leu Val Asp Tyr Leu Gly Glu Asp
 225 230 235 240
 Ser Gln Asn His Tyr Val Arg Phe Lys Ala Met Leu Asp Gly Leu Gly
 245 250 255
 Ile Gln Tyr Ile Glu Asn Pro Arg Leu Val Arg Gly Leu Asp Tyr Tyr
 260 265 270
 Asn Gln Thr Val Phe Glu Trp Thr Thr Asp Lys Leu Gly Ala Gln Ala
 275 280 285
 Thr Val Cys Gly Gly Gly Arg Tyr Asp Gly Leu Ile Glu Glu Leu Gly
 290 295 300
 Gly Lys Pro Ala Pro Ser Ile Gly Phe Ala Met Gly Ile Glu Arg Leu
 305 310 315 320
 Leu Leu Leu Val Ser Glu Tyr Gly Ser Leu Glu Val Asn Ala Ala Pro
 325 330 335
 Asp Val Tyr Ala Met His Gln Gly Glu Gly Ala Asp Leu Gln Val Met
 340 345 350
 Lys Tyr Ala Gln Ala Leu Arg Ala Gln Gly Phe Asn Val Met Gln His
 355 360 365

Ser Gly Tyr Gln Ser Leu Lys Ala Gln Met Lys Lys Ala Asp Asn Ser
 370 375 380
 Gly Ala Arg Phe Ala Leu Ile Val Ala Gln Asp Glu Leu Ala Asn Gly
 385 390 395 400
 Thr Val Thr Leu Lys Asp Met Asn Gly Ala His Gly Gln Gln Thr Val
 405 410 415
 Ala Ala Glu Asp Leu Thr Pro Thr Leu Gln Gln Trp Lys Asn Ala
 420 425 430

<210> 87
 <211> 327
 <212> PRT
 <213> Neisseria meningitidis

<400> 87
 Met Ala Ala Tyr Asp Ser Leu Met Val Phe Thr Gly Asn Ala Asn Pro
 1 5 10 15
 Glu Leu Ala Gln Arg Val Val Arg His Leu Asp Ile Ser Leu Gly Asn
 20 25 30
 Ala Ser Val Ser Lys Phe Ser Asp Gly Glu Val Ala Val Glu Leu Leu
 35 40 45
 Glu Asn Val Arg Gly Arg Asp Val Phe Ile Leu Gln Pro Thr Cys Ala
 50 55 60
 Pro Thr Asn Asp Asn Leu Met Glu Ile Leu Thr Met Ala Asp Ala Leu
 65 70 75 80
 Lys Arg Ala Ser Ala Gly Arg Ile Thr Thr Ala Ile Pro Tyr Phe Gly
 85 90 95
 Tyr Ala Arg Gln Asp Arg Arg Pro Arg Ser Val Arg Val Pro Ile Ser
 100 105 110
 Ala Lys Leu Val Ala Asn Met Leu Tyr Ser Ala Gly Ile Asp Arg Val
 115 120 125
 Leu Thr Val Asp Leu His Ala Asp Gln Ile Gln Gly Phe Phe Asp Ile
 130 135 140
 Pro Val Asp Asn Ile Tyr Ala Thr Pro Ile Leu Leu Asn Asp Ile Lys
 145 150 155 160
 Gln Gln Arg Ile Glu Asn Leu Thr Val Val Ser Pro Asp Ile Gly Gly
 165 170 175
 Val Val Arg Ala Arg Ala Val Ala Lys Ser Leu Asn Ala Asp Leu Ala
 180 185 190
 Ile Ile Asp Lys Arg Arg Pro Lys Ala Asn Val Ala Glu Val Met Asn
 195 200 205
 Ile Ile Gly Asp Ile Gln Gly Arg Thr Cys Leu Ile Val Asp Asp Met
 210 215 220
 Ile Asp Thr Ala Asn Thr Leu Cys Lys Ala Ala Val Ala Leu Lys Glu
 225 230 235 240
 Arg Gly Ala Glu Arg Val Leu Ala Tyr Ala Ser His Ala Val Phe Ser

245 110 255
 Gly Glu Ala Val Ser Arg Ile Ala Ser Ser Glu Ile Asp Gln Val Val
 260 265 270
 Val Thr Asp Thr Ile Pro Leu Ser Glu Ala Ala Lys Asn Cys Asp Arg
 275 280 285
 Ile Arg Gln Val Thr Ile Ala Gly Leu Leu Ala Glu Thr Val Arg Arg
 290 295 300
 Ile Ser Asn Glu Glu Ser Val Ser Tyr Leu Phe Asn Glu Glu Val Met
 305 310 315 320
 Thr Gly Ser Met Leu Leu Pro
 325

<210> 88
 <211> 190
 <212> PRT
 <213> Neisseria meningitidis

<400> 88
 Met Thr Tyr Glu Ile Gln Ala Ser Val Arg Glu Ala Gln Gly Thr Gly
 1 5 10 15
 Ala Ser Arg Arg Leu Arg Arg Glu Gly Gln Ile Pro Gly Ile Leu Tyr
 20 25 30
 Gly Glu Gly Gln Glu Pro Val Ala Ile Ala Val Asp His Lys Thr Val
 35 40 45
 Phe Tyr Ala Leu Glu Lys Glu Ser Phe His Thr Ala Leu Ile Lys Leu
 50 55 60
 Ser Leu Asn Gly Glu Thr Lys Asp Val Ile Val Arg Asp Phe Gln Met
 65 70 75 80
 His Pro Phe Arg Arg Glu Val Gln His Ile Asp Phe Gln Ala Val Lys
 85 90 95
 Ala Asp Gln Leu Val Arg Ile Arg Val Pro Leu His Ile Val Asn Ala
 100 105 110
 Glu Asn Ser Gln Ala Val Lys Leu Gln Gly Gly Arg Val Ser Leu Leu
 115 120 125
 Asn Thr Ser Val Glu Val Val Ala Leu Pro Ala Asn Ile Pro Ala Phe
 130 135 140
 Leu Asp Leu Asp Cys Ala Glu Val Val Ala Gly Asp Ile Leu His Leu
 145 150 155 160
 Ser Asp Ile Lys Leu Pro Glu Gly Val Glu Ser Val Ser Leu Lys Arg
 165 170 175
 Asn Glu Asn Leu Ala Val Ala Thr Val Thr Gly Lys Lys Arg
 180 185 190

<210> 89
 <211> 508
 <212> PRT
 <213> Neisseria meningitidis

<400> 89
 Met Asn Thr Pro Leu Pro Tyr Ser Asp Tyr Leu Ile Arg Ile Leu Thr
 1 5 10 15
 Ala Ser Val Tyr Asp Val Ala Val Glu Thr Pro Leu Glu Pro Ala Arg
 20 25 30
 Ser Leu Ser Val Arg Leu Lys Asn Asn Ile Leu Leu Lys Arg Glu Asp
 35 40 45
 Leu Gln Pro Val Phe Ser Phe Lys Ile Arg Gly Ala Tyr Asn Lys Met
 50 55 60
 Ser Lys Leu Pro Lys Asp Ala Leu Ala Cys Gly Val Ile Ala Ala Ser
 65 70 75 80
 Ala Gly Asn His Ala Gln Gly Val Ala Leu Ser Ala Gln Arg Leu Gly
 85 90 95
 Cys Arg Ala Val Ile Val Met Pro Glu Thr Thr Pro Lys Ile Lys Val
 100 105 110
 Asp Ala Val Lys Ser His Gly Gly Glu Val Val Leu Arg Gly Val Ser
 115 120 125
 Tyr Asn Asp Ala Tyr Asp Tyr Ala Met Glu Leu Ala Glu Lys Glu Gly
 130 135 140
 Leu Thr Tyr Ile Ala Pro Phe Asp Asp Pro Asp Val Ile Ala Gly Gln
 145 150 155 160
 Gly Thr Val Gly Met Glu Ile Val Ser Gln His Pro Asp Pro Ile Arg
 165 170 175
 Ala Val Phe Val Pro Ile Gly Gly Gly Gly Leu Ala Ala Gly Val Ala
 180 185 190
 Ala Phe Ile Lys Gln Val Arg Pro Glu Ile Lys Val Ile Gly Val Gln
 195 200 205
 Thr Asn Asp Ser Cys Cys Met Lys Gln Ser Val Glu Ala Gly Glu Ile
 210 215 220
 Val His Leu Lys Asp Val Gly Leu Phe Ser Asp Gly Thr Ala Val Lys
 225 230 235 240
 Val Val Gly Asn Glu Thr Phe Arg Leu Cys Lys Glu Leu Leu Asp Glu
 245 250 255
 Ile Ile Thr Val Asp Thr Asp Ala Val Cys Gly Ala Val Lys Asp Ile
 260 265 270
 Phe Asp Asp Thr Arg Ser Ile Thr Glu Pro Ala Gly Ala Leu Ala Leu
 275 280 285
 Ala Gly Leu Lys Ala Tyr Ile Ala Arg Glu Gly Ala Glu Asn Gln Thr
 290 295 300
 Leu Ile Ala Val Thr Ser Gly Ala Asn Met Asn Phe His Arg Leu Arg
 305 310 315 320
 His Val Ser Glu Arg Ser Glu Leu Gly Glu Gly Asn Glu Gly Ile Phe
 325 330 335

Ala Val Thr Ile Pro Glu Glu Arg Gly Ser Phe¹¹² Leu Lys Phe Val Asn
 340 345 350
 Ile Leu Gly Asn Arg Asn Ile Thr Glu Phe Asn Tyr Arg Tyr Gly Asp
 355 360 365
 Asp Glu Lys Ala His Ile Phe Val Gly Leu Gln Ala Ala Gly Pro Gln
 370 375 380
 Asp Leu Ala Val Ile Gly Ser Arg Leu Asp Glu Ala Gly Leu Pro Asn
 385 390 395 400
 Val Asp Leu Thr Asn Asn Glu Ile Ala Lys Ile His Ile Arg Tyr Met
 405 410 415
 Val Gly Gly Arg Thr Asp Lys Val Glu Asn Glu Arg Leu Val Ser Phe
 420 425 430
 Glu Phe Pro Glu Arg Pro Gly Ala Leu Ala Arg Phe Leu Asn His Met
 435 440 445
 Gln Gly Gly Trp Asn Ile Thr Leu Phe His Tyr Arg Asn His Gly Ala
 450 455 460
 Asp Tyr Gly Arg Ile Leu Val Gly Ile Asp Val Pro Pro His Asp Ala
 465 470 475 480
 Ala Ala Phe Asp Gly Phe Leu Glu Ser Leu Gly Tyr Ser Tyr His Glu
 485 490 495
 Glu Thr Gln Asn Ala Ala Tyr Lys Leu Phe Leu Ala
 500 505

<210> 90
 <211> 195
 <212> PRT
 <213> Neisseria meningitidis

<400> 90
 Met Glu His Lys Leu Pro Gln Leu Pro Tyr Glu Leu Asp Ala Leu Ser
 1 5 10 15
 Pro His Leu Ser Lys Glu Thr Leu Glu Phe His Tyr Gly Lys His His
 20 25 30
 Gln Thr Tyr Ile Thr Asn Leu Asn Asn Gln Ile Lys Gly Thr Glu Phe
 35 40 45
 Glu Asn Leu Pro Leu Glu Glu Ile Val Lys Lys Ser Ser Gly Gly Val
 50 55 60
 Phe Asn Asn Ala Ala Gln Thr Trp Asn His Thr Phe Tyr Trp Leu Gly
 65 70 75 80
 Phe Thr Ser Lys Gly Gln Gly Lys Pro Ala Gly Glu Leu Ala Ala Ala
 85 90 95
 Ile Asp Ala Lys Trp Gly Ser Phe Glu Lys Phe Gln Glu Ala Phe Asn
 100 105 110
 Ala Cys Ala Ala Gly Thr Phe Gly Ser Gly Trp Ala Trp Leu Val Lys
 115 120 125
 Thr Pro Ala Gly Gly Leu Asp Leu Val Ser Thr Ser Asn Ala Ala Thr

130 135 113 140
 Pro Leu Thr Thr Glu Asn Thr Pro Leu Leu Thr Cys Asp Val Trp Glu
 145 150 155 160
 His Ala Tyr Tyr Ile Asp Tyr Arg Asn Ser Arg Pro Asn Tyr Leu Lys
 165 170 175
 Gly Phe Trp Glu Ile Val Asn Trp Asp Glu Val Ala Lys Arg Phe Ala
 180 185 190
 Ala Leu Ser
 195
 <210> 91
 <211> 468
 <212> PRT
 <213> Neisseria meningitidis
 <400> 91
 Met Asn Asp Tyr Ala Ala Met Pro Ser Glu Asp Arg Glu Val Gly Ala
 1 5 10 15
 Leu Ser Leu Pro Pro His Ser Met Glu Ala Glu Gln Ser Val Leu Gly
 20 25 30
 Gly Leu Met Leu Glu Asn Pro Ala Trp Asp Arg Ile Ala Asp Val Val
 35 40 45
 Ser Gly Glu Asp Phe Tyr Arg His Glu His Arg Leu Ile Phe Arg Ser
 50 55 60
 Ile Ala Lys Leu Ile Asn Glu Ser Arg Pro Ala Asp Val Ile Thr Val
 65 70 75 80
 Gln Glu Asp Leu Gln Arg Asn Glu Glu Leu Glu Ala Ala Gly Gly Phe
 85 90 95
 Glu Tyr Leu Ile Thr Leu Ala Gln Asn Thr Pro Ser Ala Ala Asn Ile
 100 105 110
 Arg Arg Tyr Ala Glu Ile Val Arg Glu Arg Ser Ile Met Arg Gln Leu
 115 120 125
 Ala Glu Val Gly Thr Glu Ile Ala Arg Ser Ala Tyr Asn Pro Gln Gly
 130 135 140
 Arg Asp Ala Gly Gln Leu Leu Asp Glu Ala Glu Asn Lys Val Phe Gln
 145 150 155 160
 Ile Ala Glu Ser Thr Ala Lys Ser Lys Gln Gly Phe Leu Glu Met Pro
 165 170 175
 Asp Leu Leu Lys Glu Val Val Gln Arg Ile Asp Met Leu Tyr Ser Arg
 180 185 190
 Asp Asn Pro Asp Glu Val Thr Gly Val Pro Thr Gly Phe Ile Asp Leu
 195 200 205
 Asp Lys Lys Thr Ser Gly Leu Gln Pro Gly Asp Leu Ile Ile Val Ala
 210 215 220
 Gly Arg Pro Ser Met Gly Lys Thr Ala Phe Ser Ile Asn Ile Ala Glu
 225 230 235 240

His Val Ala Val Glu Gly Arg Leu Pro Val Ala Val Phe Ser Met Glu
 245 250 255
 Met Gly Gly Ala Gln Leu Val Met Arg Met Leu Gly Ser Val Gly Arg
 260 265 270
 Leu Asp Gln Ser Val Leu Lys Thr Gly Arg Leu Glu Asp Glu His Trp
 275 280 285
 Gly Arg Leu Asn Glu Ala Val Val Lys Leu Ser Asp Ala Pro Val Tyr
 290 295 300
 Ile Asp Glu Thr Pro Gly Leu Thr Ala Leu Glu Leu Arg Ala Arg Ala
 305 310 315 320
 Arg Arg Leu Ala Arg Gln Phe Asn Asn Lys Leu Gly Leu Ile Val Ile
 325 330 335
 Asp Tyr Leu Gln Leu Met Ala Gly Ser Gly Arg Ser Asp Asn Arg Ala
 340 345 350
 Ser Glu Leu Gly Glu Ile Ser Arg Ser Leu Lys Ala Leu Ala Lys Glu
 355 360 365
 Leu Gln Val Pro Ile Ile Ala Leu Ser Gln Leu Ser Arg Thr Val Glu
 370 375 380
 Ser Arg Thr Asp Lys Arg Pro Met Met Ser Asp Leu Arg Glu Ser Gly
 385 390 395 400
 Ala Ile Glu Gln Asp Ala Asp Leu Ile Met Phe Met Tyr Arg Asp Glu
 405 410 415
 Tyr Tyr Asn Gln Asp Ser Pro Met Lys Gly Leu Ala Glu Cys Ile Ile
 420 425 430
 Gly Lys His Arg Asn Gly Pro Val Gly Lys Ile Phe Leu Thr Trp Thr
 435 440 445
 Gly Gln Phe Thr Lys Phe Asp Asn Ala Ala Tyr Ile Pro Glu Glu Ala
 450 455 460
 Lys Ile Glu Asp
 465

<210> 92
 <211> 395
 <212> PRT
 <213> Neisseria meningitidis

<400> 92
 Met Asn Thr Leu Leu Asn Gln Leu Lys Pro Tyr Pro Phe Ala Arg Leu
 1 5 10 15
 Arg Glu Ala Met Gln Gly Ile Ser Ala Pro Glu Gly Leu Glu Ala Val
 20 25 30
 Pro Leu His Ile Gly Glu Pro Lys His Pro Thr Pro Lys Val Ile Thr
 35 40 45
 Asp Ala Leu Thr Ala Ser Leu His Glu Leu Glu Lys Tyr Pro Leu Thr
 50 55 60

Ala	Gly	Leu	Pro	Glu	Leu	Arg	Gln	Ala	Cys	Ala	Asn	Trp	Leu	Lys	Arg
65					70					75					80
Arg	Tyr	Asp	Gly	Leu	Thr	Val	Asp	Ala	Asp	Asn	Glu	Ile	Leu	Pro	Val
			85						90					95	
Leu	Gly	Ser	Arg	Glu	Ala	Leu	Phe	Ser	Phe	Val	Gln	Thr	Val	Leu	Asn
			100					105					110		
Pro	Val	Ser	Asp	Gly	Ile	Lys	Pro	Ala	Ile	Val	Ser	Pro	Asn	Pro	Phe
		115					120				125				
Tyr	Gln	Ile	Tyr	Glu	Gly	Ala	Thr	Leu	Leu	Gly	Gly	Gly	Glu	Ile	His
	130					135				140					
Phe	Ala	Asn	Cys	Pro	Ala	Pro	Ser	Phe	Asn	Pro	Asp	Trp	Arg	Ser	Ile
145					150					155					160
Ser	Glu	Glu	Val	Trp	Lys	Arg	Thr	Lys	Leu	Val	Phe	Val	Cys	Ser	Pro
				165					170					175	
Asn	Asn	Pro	Ser	Gly	Ser	Val	Leu	Asp	Leu	Asp	Gly	Trp	Lys	Glu	Val
			180					185					190		
Phe	Asp	Leu	Gln	Asp	Lys	Tyr	Gly	Phe	Ile	Ile	Ala	Ser	Asp	Glu	Cys
		195					200					205			
Tyr	Ser	Glu	Ile	Tyr	Phe	Asp	Gly	Asn	Lys	Pro	Leu	Gly	Cys	Leu	Gln
	210					215					220				
Ala	Ala	Ala	Gln	Leu	Gly	Arg	Ser	Arg	Gln	Lys	Leu	Leu	Met	Phe	Thr
225					230					235					240
Ser	Leu	Ser	Lys	Arg	Ser	Asn	Val	Pro	Gly	Leu	Arg	Ser	Gly	Phe	Val
				245					250					255	
Ala	Gly	Asp	Ala	Glu	Leu	Leu	Lys	Asn	Phe	Leu	Leu	Tyr	Arg	Thr	Tyr
			260					265					270		
His	Gly	Ser	Ala	Met	Ser	Ile	Pro	Val	Gln	Arg	Ala	Ser	Ile	Ala	Ala
		275					280					285			
Trp	Asp	Asp	Glu	Gln	His	Val	Ile	Asp	Asn	Arg	Arg	Met	Tyr	Gln	Glu
	290					295					300				
Lys	Phe	Glu	Arg	Val	Ile	Pro	Ile	Leu	Gln	Gln	Val	Phe	Asp	Val	Lys
305					310					315					320
Leu	Pro	Asp	Ala	Ser	Phe	Tyr	Ile	Trp	Leu	Lys	Val	Pro	Asp	Gly	Asp
				325					330					335	
Asp	Leu	Ala	Leu	Ala	Arg	Asn	Leu	Trp	Gln	Lys	Ala	Ala	Ile	Gln	Val
			340					345					350		
Leu	Pro	Gly	Arg	Phe	Leu	Ala	Arg	Asp	Thr	Glu	Gln	Gly	Asn	Pro	Gly
		355					360					365			
Glu	Gly	Tyr	Val	Arg	Ile	Ala	Leu	Val	Ala	Asp	Val	Ala	Thr	Cys	Val
	370					375					380				
Lys	Ala	Ala	Glu	Thr	Ile	Val	Ser	Leu	Tyr	Arg					
385					390					395					

<211> 741
 <212> PRT
 <213> Neisseria meningitidis

<400> 93
 Met Thr Gln Lys Ser Thr Ile Val Tyr Thr His Thr Asp Glu Ala Pro
 1 5 10 15
 Ala Leu Ala Thr Gln Ser Leu Leu Pro Ile Val Gln Ala Phe Ala Arg
 20 25 30
 His Ala Asp Ile Asp Val Lys Thr Ser Asp Ile Ser Leu Ser Gly Arg
 35 40 45
 Ile Leu Ala Ala Phe Pro Glu Tyr Leu Thr Glu Ala Gln Arg Val Pro
 50 55 60
 Asp Ala Leu Ala Glu Leu Gly Glu Leu Val Lys Gln Pro Asp Ala Asn
 65 70 75 80
 Val Ile Lys Leu Pro Asn Ile Ser Ala Ser Val Pro Gln Leu Thr Ala
 85 90 95
 Ala Ile Lys Glu Leu Gln Ser Lys Gly Phe Ala Val Pro Asp Tyr Pro
 100 105 110
 Ala Asp Pro Gln Thr Asp Glu Glu Lys Ala Val Arg Glu Arg Tyr Asp
 115 120 125
 Arg Ile Lys Gly Ser Ala Val Asn Pro Val Leu Arg Glu Gly Asn Ser
 130 135 140
 Asp Arg Arg Ala Pro Lys Ala Val Lys Asn Phe Ala Lys Lys Asn Pro
 145 150 155 160
 His Ser Met Gly Ala Trp Thr Lys Asp Ser Lys Thr His Val Ala Thr
 165 170 175
 Met Gln Ser Gly Asp Phe Phe His Asn Glu Gln Ser Val Ile Val Pro
 180 185 190
 Glu Ala Thr Ser Val Ser Ile Val Phe Thr Asp Lys Gln Gly Asn Lys
 195 200 205
 Lys Glu Leu Arg Glu Pro Val Ala Leu Lys Ala Gly Glu Ile Ile Asp
 210 215 220
 Ala Thr Val Met Ser Lys Lys Ala Leu Leu Ala Phe Leu Ala Glu Gln
 225 230 235 240
 Val Lys Asp Ala Lys Ala Lys Gly Val Leu Phe Ser Leu His Met Lys
 245 250 255
 Ala Thr Met Met Lys Val Ser Asp Pro Ile Ile Phe Gly His Ala Val
 260 265 270
 Lys Val Phe Phe Ala Pro Val Phe Glu Lys Phe Gly Asp Lys Leu Ala
 275 280 285
 Ala Ala Gly Val Asn Val Asn Asn Gly Phe Gly Asn Leu Leu Ala Asn
 290 295 300
 Leu Asp Lys Leu Asp Ala Asp Thr Arg Thr Ala Val Glu Ala Glu Ile
 305 310 315 320

Ala Ala Val Tyr Ala Ala Asn Pro Asp Leu Ala Met Val Asp Ser Asp
 325 330 335
 Lys Gly Ile Thr Asn Leu His Val Pro Ser Asp Val Ile Val Asp Ala
 340 345 350
 Ser Met Pro Ala Met Ile Arg Asn Ser Gly Arg Met Trp Asp Lys Asn
 355 360 365
 Gly Lys Ala Gln Asp Thr Lys Ala Val Ile Pro Asp Ser Ser Tyr Ala
 370 375 380
 Gly Val Tyr Gln Ala Thr Ile Asp Phe Cys Arg Glu His Gly Ala Phe
 385 390 395 400
 Asp Pro Thr Thr Met Gly Thr Val Pro Asn Val Gly Leu Met Ala Gln
 405 410 415
 Ala Ala Glu Glu Tyr Gly Ser His Asn Lys Thr Phe Glu Ile Glu Ala
 420 425 430
 Asp Gly Gln Val Gln Val Ile Asp Ala Ala Gly Lys Val Leu Met Gln
 435 440 445
 His Asp Val Glu Ala Gly Asp Ile Trp Arg Met Cys Gln Thr Lys Asp
 450 455 460
 Ala Pro Val Lys Asp Trp Val Gln Leu Ala Val Asn Arg Ala Arg Leu
 465 470 475 480
 Ser Asn Thr Pro Ala Val Phe Trp Leu Asp Glu Asn Arg Pro His Asp
 485 490 495
 Lys Ser Leu Leu Ala Lys Val Lys Ala Tyr Leu Ala Glu Leu Asp Thr
 500 505 510
 Asn Gly Leu Asp Ile Arg Val Leu Ala Pro Glu Glu Ala Ala Lys Phe
 515 520 525
 Ser Leu Gly Arg Leu Lys Asn Gly Glu Asp Thr Ile Ser Val Thr Gly
 530 535 540
 Asn Val Leu Arg Asp Tyr Leu Thr Asp Leu Phe Pro Ile Leu Glu Leu
 545 550 555 560
 Gly Thr Ser Ala Lys Met Leu Ser Ile Val Pro Leu Met Asn Gly Gly
 565 570 575
 Gly Met Phe Glu Thr Gly Ala Gly Gly Ser Ala Pro Lys His Val Gln
 580 585 590
 Gln Phe Leu Glu Glu Asn His Leu Arg Trp Asp Ser Leu Gly Glu Phe
 595 600 605
 Leu Ala Leu Ala Val Ser Phe Glu His Leu Ala Gln Lys Thr Gly Asn
 610 615 620
 Ala Lys Ala Gln Val Leu Ala Asp Thr Leu Asp Ala Ala Thr Glu Lys
 625 630 635 640
 Leu Leu Leu Asn Asp Lys Ser Pro Lys Arg Lys Ala Gly Glu Leu Asp
 645 650 655

Asn Arg Gly Ser His Phe Tyr Leu Thr Leu Tyr Trp Ala Gln Glu Leu
 660 665 670
 Ala Ala Gln Asp Lys Asp Ala Glu Leu Lys Ala Ala Phe Thr Pro Leu
 675 680 685
 Ala Ala Ala Leu Thr Ala Asp Glu Ala Lys Ile Val Ala Glu Leu Ser
 690 695 700
 Ala Val Gln Gly Lys Ala Ala Asp Ile Gly Gly Tyr Tyr Ala Ala Asn
 705 710 715 720
 Pro Glu Lys Ala Ala Gln Val Met Arg Pro Ser Val Thr Phe Asn Gln
 725 730 735
 Ala Leu Asn Ala Leu
 740

<210> 94
 <211> 758
 <212> PRT
 <213> Neisseria meningitidis

<400> 94
 Met Thr Thr Leu His Phe Ser Gly Phe Pro Arg Val Gly Ala Phe Arg
 1 5 10 15
 Glu Leu Lys Phe Ala Gln Glu Lys Tyr Trp Arg Lys Glu Ile Ser Glu
 20 25 30
 Gln Glu Leu Leu Ala Val Ala Lys Asp Leu Arg Glu Lys Asn Trp Lys
 35 40 45
 His Gln Val Ala Ala Asn Ala Asp Phe Val Ala Val Gly Asp Phe Thr
 50 55 60
 Phe Tyr Asp His Ile Leu Asp Leu Gln Val Ala Thr Gly Ala Ile Pro
 65 70 75 80
 Ala Arg Phe Gly Phe Asp Ser Gln Asn Leu Ser Leu Glu Gln Phe Phe
 85 90 95
 Gln Leu Ala Arg Gly Asn Lys Asp Gln Phe Ala Ile Glu Met Thr Lys
 100 105 110
 Trp Phe Asp Thr Asn Tyr His Tyr Leu Val Pro Glu Phe His Ala Asp
 115 120 125
 Thr Glu Phe Lys Ala Asn Ala Lys His Tyr Val Gln Gln Leu Gln Glu
 130 135 140
 Ala Gln Ala Leu Gly Leu Lys Ala Lys Pro Thr Val Val Gly Pro Leu
 145 150 155 160
 Thr Phe Leu Trp Val Gly Lys Glu Lys Gly Ala Val Glu Phe Asp Arg
 165 170 175
 Leu Ser Leu Leu Pro Lys Leu Leu Pro Val Tyr Val Glu Ile Leu Thr
 180 185 190
 Ala Leu Val Glu Ala Gly Ala Glu Trp Ile Gln Ile Asp Glu Pro Ala
 195 200 205
 Leu Ala Val Asp Leu Pro Lys Glu Trp Val Glu Ala Tyr Lys Asp Val

210										215			119 220						
Tyr 225	Ala	Thr	Leu	Ser	Lys 230	Val	Ser	Ala	Lys	Ile 235	Leu	Leu	Ser	Thr	Tyr 240				
Phe	Gly	Ser	Val	Ala 245	Glu	His	Ala	Ala	Leu 250	Leu	Lys	Ala	Leu	Pro 255	Val				
Asp	Gly	Leu	His 260	Ile	Asp	Leu	Val	Arg 265	Ala	Pro	Glu	Gln	Leu 270	Asp	Ala				
Phe	Ala	Asp 275	Tyr	Asp	Lys	Val	Leu 280	Ser	Ala	Gly	Val	Ile 285	Asp	Gly	Arg				
Asn	Ile 290	Trp	Arg	Ala	Asn	Leu 295	Asn	Lys	Val	Leu	Glu 300	Thr	Val	Glu	Pro				
Leu 305	Gln	Ala	Lys	Leu	Gly 310	Asp	Arg	Leu	Trp	Ile 315	Ser	Ser	Ser	Cys	Ser 320				
Leu	Leu	His	Thr	Pro 325	Phe	Asp	Leu	Ser	Val 330	Glu	Glu	Lys	Leu	Lys 335	Ala				
Asn	Lys	Pro	Asp 340	Leu	Tyr	Ser	Trp	Leu 345	Ala	Phe	Thr	Leu	Gln 350	Lys	Thr				
Gln	Glu	Leu 355	Arg	Val	Leu	Lys	Ala 360	Ala	Leu	Asn	Glu	Gly 365	Arg	Asp	Ser				
Val	Ala 370	Glu	Glu	Leu	Ala	Ala 375	Ser	Gln	Ala	Ala	Ala 380	Asp	Ser	Arg	Ala				
Asn 385	Ser	Ser	Glu	Ile	His 390	Arg	Ala	Asp	Val	Ala 395	Lys	Arg	Leu	Ala	Asp 400				
Leu	Pro	Ala	Asn	Ala 405	Asp	Gln	Arg	Lys	Ser 410	Pro	Phe	Ala	Asp	Arg 415	Ile				
Lys	Ala	Gln	Gln 420	Ala	Trp	Leu	Asn	Leu 425	Pro	Leu	Leu	Pro	Thr 430	Thr	Asn				
Ile	Gly	Ser 435	Phe	Pro	Gln	Thr	Thr 440	Glu	Ile	Arg	Gln	Ala 445	Arg	Ser	Ala				
Phe	Lys 450	Lys	Gly	Glu	Leu	Ser 455	Ala	Ala	Asp	Tyr	Glu 460	Ala	Ala	Met	Lys				
Lys 465	Glu	Ile	Ala	Leu	Val 470	Val	Glu	Glu	Gln	Glu 475	Lys	Leu	Asp	Leu	Asp 480				
Val	Leu	Val	His 485	Gly	Glu	Ala	Glu	Arg	Asn 490	Asp	Met	Val	Glu	Tyr 495	Phe				
Gly	Glu	Leu	Leu 500	Ser	Gly	Phe	Ala	Phe 505	Thr	Gln	Tyr	Gly	Trp 510	Val	Gln				
Ser	Tyr	Gly 515	Ser	Arg	Cys	Val	Lys 520	Pro	Pro	Ile	Ile	Phe 525	Gly	Asp	Val				
Ser	Arg 530	Pro	Glu	Ala	Met	Thr 535	Val	Ala	Trp	Ser	Thr 540	Tyr	Ala	Gln	Ser				
Leu 545	Thr	Lys	Arg	Pro	Met 550	Lys	Gly	Met	Leu	Thr 555	Gly	Pro	Val	Thr	Ile 560				

Leu Gln Trp Ser Phe Val Arg Asn Asp Ile Pro Arg Ser Thr Val Cys
 565 570 575
 Lys Gln Ile Ala Leu Ala Leu Asn Asp Glu Val Leu Asp Leu Glu Lys
 580 585 590
 Ala Gly Ile Lys Val Ile Gln Ile Asp Glu Pro Ala Ile Arg Glu Gly
 595 600 605
 Leu Pro Leu Lys Arg Ala Asp Trp Asp Ala Tyr Leu Asn Trp Ala Gly
 610 615 620
 Glu Ser Phe Arg Leu Ser Ser Ala Gly Cys Glu Asp Ser Thr Gln Ile
 625 630 635 640
 His Thr His Met Cys Tyr Ser Glu Phe Asn Asp Ile Leu Pro Ala Ile
 645 650 655
 Ala Ala Met Asp Ala Asp Val Ile Thr Ile Glu Thr Ser Arg Ser Asp
 660 665 670
 Met Glu Leu Leu Thr Ala Phe Gly Glu Phe Gln Tyr Pro Asn Asp Ile
 675 680 685
 Gly Pro Gly Val Tyr Asp Ile His Ser Pro Arg Val Pro Thr Glu Ala
 690 695 700
 Glu Val Glu His Leu Leu Arg Lys Ala Ile Glu Val Val Pro Val Glu
 705 710 715 720
 Arg Leu Trp Val Asn Pro Asp Cys Gly Leu Lys Thr Arg Gly Trp Lys
 725 730 735
 Glu Thr Leu Glu Gln Leu Gln Val Met Met Asn Val Thr Arg Lys Leu
 740 745 750
 Arg Ala Glu Leu Ala Lys
 755

<210> 95
 <211> 245
 <212> PRT
 <213> Neisseria meningitidis

<400> 95
 Met Ala Leu Gln Asp Arg Thr Gly Gln Lys Val Pro Ser Val Val Phe
 1 5 10 15
 Arg Thr Arg Val Gly Asp Thr Trp Lys Asp Val Ser Thr Asp Asp Leu
 20 25 30
 Phe Lys Gly Lys Lys Val Val Val Phe Ser Leu Pro Gly Ala Phe Thr
 35 40 45
 Pro Thr Cys Ser Ser Ser His Leu Pro Arg Tyr Asn Glu Leu Phe Gly
 50 55 60
 Ala Phe Lys Glu Asn Gly Val Asp Ala Ile Tyr Cys Val Ser Val Asn
 65 70 75 80
 Asp Thr Phe Val Met Asn Ala Trp Ala Ala Glu Glu Glu Ser Asp Asn
 85 90 95

Ile Tyr Met Ile Pro Asp Gly Asn Gly Glu Phe Thr Glu Gly Met Gly
 100 105 110
 Met Leu Val Gly Lys Glu Asp Leu Gly Phe Gly Lys Arg Ser Trp Arg
 115 120 125
 Tyr Ser Met Leu Val Asn Asp Gly Val Val Glu Lys Met Phe Ile Glu
 130 135 140
 Pro Glu Glu Pro Gly Asp Pro Phe Lys Val Ser Asp Ala Asp Thr Met
 145 150 155 160
 Leu Gln Phe Val Ala Pro Asp Trp Lys Ala Gln Glu Ser Val Ala Ile
 165 170 175
 Phe Thr Lys Pro Gly Cys Gln Phe Cys Ala Lys Ala Lys Gln Ala Leu
 180 185 190
 Gln Asp Lys Gly Leu Ser Tyr Glu Glu Ile Val Leu Gly Lys Asp Ala
 195 200 205
 Thr Val Thr Ser Val Arg Ala Ile Thr Gly Lys Met Thr Ala Pro Gln
 210 215 220
 Val Phe Ile Gly Gly Lys Tyr Ile Gly Gly Ser Glu Asp Leu Glu Ala
 225 230 235 240
 Tyr Leu Ala Lys Asn
 245

<210> 96
 <211> 467
 <212> PRT
 <213> Neisseria meningitidis

<400> 96
 Met Lys Lys Ile Gln Ala Asp Val Val Val Ile Gly Gly Gly Thr Ala
 1 5 10 15
 Gly Met Gly Ala Phe Arg Asn Ala Arg Leu His Ser Asp Asn Val Tyr
 20 25 30
 Leu Ile Glu Asn Asn Val Phe Gly Thr Thr Cys Ala Arg Val Gly Cys
 35 40 45
 Met Pro Ser Lys Leu Leu Ile Ala Ala Ala Glu Ala Arg His His Ala
 50 55 60
 Leu His Thr Asp Pro Phe Gly Val His Leu Asp Lys Asp Ser Ile Val
 65 70 75 80
 Val Asn Gly Glu Glu Val Met Gln Arg Val Lys Ser Glu Arg Asp Arg
 85 90 95
 Phe Val Gly Phe Val Val Ala Asp Val Glu Glu Trp Pro Ala Asp Lys
 100 105 110
 Arg Ile Met Gly Ser Ala Lys Phe Ile Asp Glu His Thr Val Gln Ile
 115 120 125
 Asp Glu His Thr Gln Ile Thr Ala Lys Ser Phe Val Ile Ala Thr Gly
 130 135 140
 Ser Arg Pro Val Ile Leu Pro Gln Trp Gln Ser Leu Gly Asn Arg Leu

<212> PRT

<213> Neisseria meningitidis

<400> 97

Met Met Asp Glu Lys Leu Asn Phe Ser Tyr Leu Phe Gly Ser Asn Ala
 1 5 10 15
 Pro Tyr Ile Glu Glu Leu Tyr Glu Ala Phe Leu Glu Asn Pro Asp Ala
 20 25 30
 Val Asp Glu Lys Trp Lys Gln Tyr Phe Thr Asp Leu Ser Lys Gln Pro
 35 40 45
 Gly Thr Val Ala Val Asp Val Ala His Thr Pro Ile Arg Glu Ser Phe
 50 55 60
 Val Thr Leu Ala Lys Lys Lys Ile Ala Ser Ala Val Ala Gly Gly Ala
 65 70 75 80
 Asp Glu Ala Met Leu Lys Lys Gln Val Ser Val Leu Arg Leu Ile Ser
 85 90 95
 Ala Tyr Arg Ile Gln Gly Val Gly Ala Ala Gln Leu Asp Pro Leu Lys
 100 105 110
 Arg Ile Pro Pro Arg Asp Ile Glu Ala Leu Asp Pro Lys Phe His Gly
 115 120 125
 Leu Ser Asp Ala Asp Met Ala Leu Gln Phe Asn Met Gly Glu Gly Asp
 130 135 140
 Phe Ala Asn Arg Gly Lys Leu Pro Leu Ser Gln Ile Ile Ser Asn Leu
 145 150 155 160
 Lys Gln Thr Tyr Cys Gly His Ile Ala Leu Glu Tyr Ile Tyr Ile Pro
 165 170 175
 Asn Thr Glu Glu Arg Arg Trp Val Arg Asn Tyr Phe Glu Ser Val Leu
 180 185 190
 Ser Thr Pro His Tyr Asn Ala Asp Gln Lys Arg Arg Ile Leu Lys Glu
 195 200 205
 Met Thr Ala Ala Glu Thr Leu Glu Arg Tyr Leu His Thr Lys Tyr Val
 210 215 220
 Gly Gln Lys Arg Phe Gly Val Glu Gly Gly Glu Ser Ala Ile Ala Gly
 225 230 235 240
 Leu Asn Tyr Leu Ile Gln Asn Ala Gly Lys Asp Gly Val Glu Glu Val
 245 250 255
 Ile Ile Gly Met Ala His Arg Gly Arg Leu Asn Val Leu Val Asn Ile
 260 265 270
 Leu Gly Lys Lys Pro Gly Asp Leu Phe Ala Glu Phe Glu Gly Arg Ala
 275 280 285
 Glu Ile Lys Leu Pro Ser Gly Asp Val Lys Tyr His Met Gly Phe Ser
 290 295 300
 Ser Asp Ile Ala Thr Pro His Gly Pro Met His Val Ser Leu Ala Phe
 305 310 315 320

Asn Pro Ser His Leu Glu Ile Val Asn Pro Val Val Glu Gly Ser Ala
 325 330 335
 Arg Ala Lys Gln Lys Arg Leu Gly Glu Asn Gly Arg Asp Lys Val Leu
 340 345 350
 Pro Val Leu Ile His Gly Asp Ser Ala Phe Ile Gly Leu Gly Val Asn
 355 360 365
 Gln Ala Thr Phe Asn Leu Ser Lys Thr Arg Gly Tyr Thr Thr Gly Gly
 370 375 380
 Thr Val His Ile Val Ile Asn Asn Gln Ile Gly Phe Thr Thr Ser Asp
 385 390 395 400
 Ile Arg Asp Thr Arg Ser Thr Val His Cys Thr Asp Ile Ala Lys Met
 405 410 415
 Val Ser Ala Pro Val Ile His Val Asn Gly Asp Asp Pro Glu Arg Val
 420 425 430
 Cys Phe Ala Ile Gln Ala Ala Leu Asp Tyr Arg Lys Lys Phe His Lys
 435 440 445
 Asp Ile Val Ile Asp Val Val Cys Tyr Arg Lys Trp Gly His Asn Glu
 450 455 460
 Gly Asp Asp Pro Thr Leu Thr Gln Pro Met Met Tyr Lys Lys Val Ser
 465 470 475 480
 Gln His Pro Gly Ala Arg Ala Leu Tyr Thr Glu Gln Leu Ile Ala Glu
 485 490 495
 Gly Val Val Thr Gln Ala Glu Ala Asp Gly Tyr Ile Gln Ala Tyr Arg
 500 505 510
 Asp Ala Leu Asp Lys Gly Glu His Val Glu Gln Thr Thr Leu Ser Asn
 515 520 525
 Phe Gln Arg Thr Gln Ile Asp Trp Ser Lys Tyr Gln Gly Lys Asp Trp
 530 535 540
 Arg Glu His Ile Glu Thr Gly Leu Pro Ala Ala Asp Ile Glu Arg Leu
 545 550 555 560
 Thr Glu Lys Phe Thr Ala Val Pro Glu Gly Phe Ala Leu His Pro Thr
 565 570 575
 Ala Lys Arg Val Ile Glu Ala Arg Lys Ala Met Ala Ser Gly Lys Gln
 580 585 590
 Ala Ile Asp Trp Gly Met Ala Glu Thr Leu Ala Tyr Ala Ser Leu Val
 595 600 605
 Thr Lys Gly His Gly Val Arg Ile Ser Gly Glu Asp Ser Gly Arg Gly
 610 615 620
 Thr Phe Ser His Arg His Ala Val Leu His Asp Gln Lys Arg Glu Lys
 625 630 635 640
 Trp Asp Asp Gly Thr Tyr Val Pro Leu Arg His Met Gly Glu Gly Met
 645 650 655
 Gly Glu Phe Leu Val Ile Asp Ser Ile Leu Asn Glu Glu Ala Val Met

660 125 670
 Ala Phe Glu Tyr Gly Phe Ala Cys Ser Ala Pro Asp Lys Leu Thr Ile
 675 680 685
 Trp Glu Ala Gln Phe Gly Asp Phe Ala Asn Gly Ala Gln Val Thr Ile
 690 695 700
 Asp Gln Phe Leu Ser Ser Gly Glu Thr Lys Trp Gly Arg Leu Cys Gly
 705 710 715 720
 Leu Thr Thr Ile Leu Pro His Gly Tyr Asp Gly Gln Gly Pro Glu His
 725 730 735
 Ser Ser Ala Arg Val Glu Arg Trp Leu Gln Leu Cys Ser Glu Asn Asn
 740 745 750
 Met Gln Val Ile Met Pro Ser Glu Ala Ser Gln Met Phe His Leu Leu
 755 760 765
 Gln Arg Gln Val Leu Gly Ser Tyr Arg Lys Pro Leu Val Ile Phe Met
 770 775 780
 Ser Lys Arg Leu Leu Arg Phe Lys Gly Ala Met Ser Pro Leu Glu Asn
 785 790 795 800
 Phe Thr Glu Gly Ser Thr Phe Arg Pro Val Ile Gly Asp Thr Ala Glu
 805 810 815
 Arg Ala Ser Asn Asp Ser Val Lys Arg Val Val Leu Cys Ala Gly Gln
 820 825 830
 Val Tyr Tyr Asp Leu Glu Ala Gly Arg Ala Glu Arg Lys Leu Glu Asp
 835 840 845
 Asp Val Ala Ile Val Arg Val Glu Gln Leu Tyr Pro Phe Pro Tyr Asp
 850 855 860
 Glu Val Lys Ala Glu Leu Ala Lys Tyr Pro Asn Ala Lys Ser Val Val
 865 870 875 880
 Trp Ala Gln Glu Glu Pro Lys Asn Gln Gly Ala Phe Tyr Gln Ile Arg
 885 890 895
 His Arg Ile Glu Asp Val Ile Ser Glu Glu Gln Lys Leu Ser Tyr Ala
 900 905 910
 Gly Arg Pro Ser Ser Ala Ser Pro Ala Val Gly Tyr Ser Ser Lys His
 915 920 925
 Ile Ala Gln Leu Lys Gln Leu Val Glu Asp Ala Leu Ala Leu
 930 935 940

<210> 98
 <211> 393
 <212> PRT
 <213> Neisseria meningitidis

<400> 98
 Met Ile Ile Asp Val Lys Val Pro Met Leu Ser Glu Ser Val Ser Glu
 1 5 10 15
 Gly Thr Leu Leu Glu Trp Lys Lys Lys Val Gly Glu Ala Val Ala Arg
 20 25 30

Asp Glu Ile Leu Ile Asp Ile Glu Thr Asp Lys Val Val Leu Glu Val
 35 40 45
 Pro Ser Pro Gln Ala Gly Val Leu Val Glu Ile Val Ala Gln Asp Gly
 50 55 60
 Glu Thr Val Val Ala Asp Gln Val Leu Ala Arg Val Asp Thr Ala Ala
 65 70 75 80
 Thr Ala Ala Ala Glu Ala Pro Ala Ala Ala Pro Ala Glu Ala Ala Pro
 85 90 95
 Ala Ala Ala Pro Ala Ala Thr Gln Asn Asn Ala Ala Met Pro Ala Ala
 100 105 110
 Ala Lys Leu Ala Ala Glu Thr Gly Val Asp Val Asn Ala Leu Gln Gly
 115 120 125
 Ser Gly Arg Asp Gly Arg Val Leu Lys Glu Asp Val Gln Asn Ala Ala
 130 135 140
 Ala Lys Pro Ala Gly Ala Ala Ala Pro Ala Val Ala Leu Pro Ala Gly
 145 150 155 160
 Ala Arg Pro Glu Glu Arg Val Pro Met Ser Arg Leu Arg Ala Arg Val
 165 170 175
 Ala Glu Arg Leu Leu Ala Ser Gln Gln Glu Asn Ala Ile Leu Thr Thr
 180 185 190
 Phe Asn Glu Val Asn Met Lys Pro Ile Met Asp Leu Arg Ala Lys Tyr
 195 200 205
 Lys Glu Lys Phe Glu Lys Glu His Gly Val Lys Leu Gly Phe Met Ser
 210 215 220
 Phe Phe Val Lys Ala Ala Val Ala Ala Leu Lys Lys Tyr Pro Val Val
 225 230 235 240
 Asn Ala Ser Val Asp Gly Lys Asp Ile Val Tyr His Gly Tyr Phe Asp
 245 250 255
 Ile Gly Ile Ala Ile Gly Ser Pro Arg Gly Leu Val Val Pro Ile Leu
 260 265 270
 Arg Asp Ala Asp Gln Met Ser Ile Ala Asp Ile Glu Gln Ala Ile Val
 275 280 285
 Asp Tyr Ala Lys Lys Ala Lys Asp Gly Lys Ile Ala Ile Glu Asp Leu
 290 295 300
 Thr Gly Gly Thr Phe Ser Ile Thr Asn Gly Gly Thr Phe Gly Ser Met
 305 310 315 320
 Met Ser Thr Pro Ile Ile Asn Pro Pro Gln Ser Ala Ile Leu Gly Met
 325 330 335
 His Ala Thr Lys Glu Arg Ala Val Val Glu Asn Gly Gln Val Val Val
 340 345 350
 Arg Pro Met Met Tyr Leu Ala Leu Ser Tyr Asp His Arg Ile Ile Asp
 355 360 365

Gly Arg Glu Ala Val Leu Thr Leu Val Ala Ile Lys Asp Ala Leu Glu
 370 375 380 127

Asp Pro Ala Arg Leu Leu Leu Asp Leu
 385 390

<210> 99
 <211> 388
 <212> PRT
 <213> Neisseria meningitidis

<400> 99
 Met Asn Leu His Glu Tyr Gln Ala Lys Glu Leu Leu Ala Ser Tyr Gly
 1 5 10 15

Leu Pro Val Gln Gly Gly Ile Leu Ala His Asn Gly Glu Glu Ala Ala
 20 25 30

Ala Ala Tyr Asp Lys Leu Gly Gly Lys Phe Ala Val Val Lys Ala Gln
 35 40 45

Val His Ala Gly Gly Arg Gly Lys Ala Gly Gly Val Lys Val Val Lys
 50 55 60

Ser Arg Glu Glu Ala Lys Glu Val Ala Glu Ser Leu Ile Gly Thr Asn
 65 70 75 80

Leu Val Thr Tyr Gln Thr Asp Ala Asn Gly Gln Pro Val Asn Ser Val
 85 90 95

Leu Val Cys Glu Asp Met Tyr Pro Val Gln Thr Glu Leu Tyr Leu Gly
 100 105 110

Ala Val Val Asp Arg Ser Thr Arg Arg Ile Thr Phe Met Ala Ser Thr
 115 120 125

Glu Gly Gly Val Glu Ile Glu Lys Val Ala Ala Glu Thr Pro Glu Lys
 130 135 140

Ile Phe Lys Val Thr Val Asp Pro Leu Val Gly Leu Gln Pro Cys Gln
 145 150 155 160

Ala Arg Glu Val Ala Phe Gln Leu Gly Leu Lys Asp Lys Gln Ile Asn
 165 170 175

Glu Phe Val Lys Leu Met Thr Gly Ala Tyr Lys Ala Phe Val Glu Asn
 180 185 190

Asp Phe Ala Leu Phe Glu Val Asn Pro Leu Ala Val Arg Glu Asn Gly
 195 200 205

Ala Leu Ala Cys Val Asp Gly Lys Ile Gly Ile Asp Ser Asn Ala Leu
 210 215 220

Tyr Arg Leu Pro Lys Ile Ala Glu Leu Arg Asp Lys Ser Gln Glu Asn
 225 230 235 240

Glu Arg Glu Leu Lys Ala Ser Glu Phe Asp Leu Asn Tyr Val Ala Leu
 245 250 255

Glu Gly Asn Ile Gly Cys Met Val Asn Gly Ala Gly Leu Ala Met Ala
 260 265 270

Thr Met Asp Ile Ile Lys Leu Lys Gly Gly Gln Pro Ala Asn Phe Leu

275 280 128 285
 Asp Val Gly Gly Gly Ala Thr Lys Asp Arg Val Val Glu Ala Phe Lys
 290 295 300
 Leu Ile Leu Glu Asp Lys Ser Val Gln Gly Val Leu Ile Asn Ile Phe
 305 310 315 320
 Gly Gly Ile Val Arg Cys Asp Met Ile Ala Glu Ala Ile Val Ala Ala
 325 330 335
 Val Lys Glu Ile Asn Val Asn Val Pro Val Val Val Arg Leu Glu Gly
 340 345 350
 Asn Asn Ala Glu Leu Gly Ala Lys Ile Leu Asn Glu Ser Gly Leu Lys
 355 360 365
 Leu Thr Ser Ala Asp Gly Leu Asn Asp Ala Ala Glu Lys Ile Val Ala
 370 375 380
 Ala Val Asn Ala
 385

<210> 100
 <211> 296
 <212> PRT
 <213> Neisseria meningitidis

<400> 100
 Met Ser Val Leu Ile Asn Lys Asp Thr Lys Val Leu Val Gln Gly Phe
 1 5 10 15
 Thr Gly Lys Asn Gly Thr Phe His Ser Glu Gln Ala Leu Ala Tyr Gly
 20 25 30
 Thr Lys Val Val Gly Gly Val Thr Pro Gly Lys Gly Gly Gln Thr His
 35 40 45
 Leu Asn Leu Pro Val Phe Asn Thr Met Lys Glu Ala Val Lys Glu Thr
 50 55 60
 Gly Ala Asp Ala Ser Val Ile Tyr Val Pro Ala Pro Phe Val Leu Asp
 65 70 75 80
 Ser Ile Val Glu Ala Val Asp Ser Gly Val Gly Leu Val Val Val Ile
 85 90 95
 Thr Glu Gly Val Pro Thr Leu Asp Met Leu Lys Ala Lys Arg Tyr Leu
 100 105 110
 Glu Thr Asn Gly Asn Gly Thr Arg Leu Val Gly Pro Asn Cys Pro Gly
 115 120 125
 Val Ile Thr Pro Gly Glu Cys Lys Ile Gly Ile Met Pro Gly His Ile
 130 135 140
 His Thr Pro Gly Arg Ile Gly Ile Ile Ser Arg Ser Gly Thr Leu Thr
 145 150 155 160
 Tyr Glu Ala Val Ala Gln Thr Thr Lys Leu Gly Leu Gly Gln Ser Thr
 165 170 175
 Cys Ile Gly Ile Gly Gly Asp Pro Ile Pro Gly Met Asn Gln Ile Asp
 180 185 190

Ala Leu Lys Leu Phe Gln Glu Asp Pro Asp Thr Asp Ala Ile Ile Met
 195 200 205
 Ile Gly Glu Ile Gly Gly Thr Ala Glu Glu Glu Ala Ala Glu Tyr Ile
 210 215 220
 Gln Ser Asn Val Ser Lys Pro Val Val Gly Tyr Ile Ala Gly Val Thr
 225 230 235 240
 Ala Pro Lys Gly Lys Arg Met Gly His Ala Gly Ala Ile Ile Ser Gly
 245 250 255
 Gly Lys Gly Thr Ala Glu Glu Lys Phe Ala Ala Phe Glu Lys Ala Gly
 260 265 270
 Ile Ala Tyr Thr Arg Ser Pro Ala Glu Leu Gly Thr Thr Met Leu Glu
 275 280 285
 Val Leu Lys Ala Lys Gly Leu Ala
 290 295

<210> 101
 <211> 526
 <212> PRT
 <213> Neisseria meningitidis

<400> 101
 Met Ser Ser Ile Lys Arg Ala Leu Ile Ser Leu Ser Asp Lys Thr Gly
 1 5 10 15
 Ala Val Glu Phe Ala Gln Thr Leu His Lys Leu Gly Val Glu Ile Leu
 20 25 30
 Ser Thr Gly Gly Thr Ala Lys Leu Leu Ala Asp Ala Gly Val Pro Val
 35 40 45
 Ile Glu Val Ala Asp Tyr Thr Gly Phe Pro Glu Met Leu Asp Gly Arg
 50 55 60
 Val Lys Thr Leu His Pro Lys Ile His Gly Gly Ile Leu Gly Arg Arg
 65 70 75 80
 Asp Leu Asp Glu His Val Ala Lys Met Glu Glu His Gly Ile Gly Asn
 85 90 95
 Ile Asp Leu Val Cys Val Asn Leu Tyr Leu Phe Ala Ala Thr Ile Ala
 100 105 110
 Lys Pro Asn Cys Thr Leu Glu Asp Ala Ile Glu Asn Ile Asp Ile Gly
 115 120 125
 Gly Pro Thr Met Val Arg Ser Ala Ala Lys Asn Trp Lys His Val Ala
 130 135 140
 Ile Val Thr Asp Thr Ala Asp Phe Pro Ala Ile Ala Ala Glu Leu Glu
 145 150 155 160
 Ala Asn Asn Gly Ala Leu Ser Asp Lys Thr Arg Phe Asn Leu Ser Arg
 165 170 175
 Lys Ala Phe Ser His Thr Ala Gln Tyr Asp Gly Met Ile Ser Asn Tyr
 180 185 190

Leu	Thr	Ser	Leu	Ser	Asp	Asp	Val	Leu	Ser	Gly	Thr	Pro	Glu	Ile	Ala
		195					200			130		205			
Gly	Phe	Pro	Gly	Arg	Phe	Asn	Gln	Ser	Trp	Ile	Lys	Val	Gln	Asp	Met
	210					215					220				
Arg	Tyr	Gly	Glu	Asn	Pro	His	Gln	Arg	Ala	Ala	Phe	Tyr	Arg	Asp	Ile
225					230					235					240
Asp	Pro	Ala	Ala	Gly	Ser	Leu	Ala	Ala	Tyr	Lys	Gln	Leu	Gln	Gly	Lys
				245					250					255	
Glu	Leu	Ser	Tyr	Asn	Asn	Ile	Ala	Asp	Ala	Asp	Ala	Ala	Trp	Glu	Ala
			260					265					270		
Val	Lys	Ser	Phe	Asp	Val	Pro	Ala	Cys	Val	Ile	Val	Lys	His	Ala	Asn
		275					280					285			
Pro	Cys	Gly	Val	Ala	Ile	Ala	Ser	Asn	Thr	Leu	Asp	Ala	Tyr	Lys	Leu
	290					295					300				
Ala	Tyr	Ala	Thr	Asp	Thr	Thr	Ser	Ala	Phe	Gly	Gly	Ile	Ile	Ala	Phe
305					310					315					320
Asn	Arg	Glu	Val	Asp	Gly	Ala	Thr	Val	Lys	Gln	Ile	Thr	Asp	Asn	Gln
				325					330					335	
Phe	Met	Glu	Val	Leu	Met	Ala	Pro	Lys	Phe	Thr	Ala	Glu	Ala	Leu	Glu
			340					345					350		
Ile	Ala	Ala	Ala	Lys	Lys	Asn	Val	Arg	Val	Leu	Glu	Val	Pro	Leu	Glu
		355					360					365			
Ala	Gly	Ala	Asn	Arg	Phe	Glu	Leu	Lys	Arg	Val	Gly	Gly	Gly	Leu	Leu
	370					375					380				
Val	Gln	Thr	Pro	Asp	Ile	His	Arg	Ile	Ser	Arg	Ala	Asp	Leu	Lys	Val
385					390					395					400
Val	Ser	Lys	Arg	Gln	Pro	Thr	Glu	Gln	Glu	Trp	Asn	Asp	Leu	Leu	Phe
				405					410					415	
Val	Trp	Asn	Val	Ala	Lys	Tyr	Val	Lys	Ser	Asn	Ala	Ile	Val	Phe	Gly
			420					425					430		
Lys	Gly	Gly	Gln	Thr	Tyr	Gly	Ile	Gly	Ala	Gly	Gln	Met	Ser	Arg	Val
		435					440					445			
Asp	Ser	Thr	Arg	Ile	Ala	Ala	Arg	Lys	Ala	Gln	Asp	Ala	Gly	Leu	Asp
	450					455					460				
Leu	Asn	Gly	Ala	Cys	Ala	Ala	Ser	Asp	Ala	Phe	Phe	Pro	Phe	Arg	Asp
465					470					475					480
Gly	Val	Asp	Val	Ile	Ala	Glu	Gln	Gly	Ile	Lys	Ala	Ile	Ile	His	Pro
				485					490					495	
Ala	Gly	Ser	Met	Arg	Asp	Gln	Glu	Val	Phe	Asp	Ala	Ala	Asp	Glu	His
			500					505					510		
Gly	Ile	Ala	Met	Val	Val	Thr	Gly	Ile	Arg	His	Phe	Arg	His		
		515					520					525			

<210> 102

<211> 563
 <212> PRT
 <213> Neisseria meningitidis

<400> 102
 Met Ser Ala Ser Gln Leu Leu Ser Arg Leu Thr Gln Thr Val Gly Glu
 1 5 10 15
 Lys Tyr Ile Ile Thr Asp Pro Ala Lys Thr Glu Gln Tyr Arg Gln Gly
 20 25 30
 Tyr Arg Phe Gly Glu Gly Lys Ala Leu Ala Val Val Arg Pro Gly Ser
 35 40 45
 Ile Leu Glu Met Trp Lys Ile Leu Gln Ala Cys Val Glu Ala Asp Val
 50 55 60
 Ile Val Ile Thr Gln Ala Ala Asn Thr Gly Leu Thr Gly Gly Ser Thr
 65 70 75 80
 Pro Asp Gly Asn Asp Tyr Asp Arg Asp Ile Val Ile Val Asn Thr Met
 85 90 95
 Arg Met Asn Ile Ile Gln Thr Ile Asn Asn Asn Glu Gln Val Val Cys
 100 105 110
 Leu Pro Gly Ser Thr Leu Asn Gln Leu Glu Leu Leu Leu Lys Pro Leu
 115 120 125
 Gly Arg Glu Pro His Ser Val Ile Gly Ser Ser Cys Ile Gly Ala Ser
 130 135 140
 Val Leu Gly Gly Val Cys Asn Asn Ser Gly Gly Ala Leu Val Gln Arg
 145 150 155 160
 Gly Pro Ala Tyr Thr Glu Met Ala Leu Phe Ala Gln Ile Asn Glu Glu
 165 170 175
 Gly Arg Leu Glu Leu Val Asn His Leu Gly Ile Asp Leu Gly Asn Thr
 180 185 190
 Pro Glu Glu Ile Leu Thr Asn Leu Gln Gly His His Tyr Gln Asn Lys
 195 200 205
 Asp Ile Thr Gln Asp Ala Gly Lys Gly His Asp His Ala Tyr Cys Glu
 210 215 220
 His Val Arg Gln Val Asp Glu Pro Thr Ala Ala Arg Phe Asn Ala Asp
 225 230 235 240
 Pro Ala Arg His Tyr Glu Ala Ser Gly Cys Ala Gly Lys Leu Met Val
 245 250 255
 Phe Ala Val Arg Leu Asp Thr Phe Pro Gln Glu Lys Gln Thr Ala Val
 260 265 270
 Phe Tyr Ile Gly Thr Asn Asp Ile Asn Glu Leu Thr Asp Ile Arg Arg
 275 280 285
 Ala Ala Leu Gly Glu Phe Glu Ser Leu Pro Val Ser Gly Glu Tyr Ile
 290 295 300
 His Arg His Ala Phe Asp Ile Ala Asp Val Tyr Gly Lys Asp Thr Phe
 305 310 315 320

Tyr Val Ile Lys Lys Phe Gly Thr His Gln Leu Pro Lys Leu Phe Asp
 325 330 335
 Leu Lys Ala Arg Val Asp Arg Phe Gly Lys Lys Val Ser Phe Leu Pro
 340 345 350
 Lys His Phe Ser Asp Lys Ala Met Gln Phe Val Ser Lys Phe Leu Pro
 355 360 365
 Asp His Leu Pro Lys Ser Met Arg Asp Tyr Arg Asp Lys Tyr Glu His
 370 375 380
 His Leu Ile Leu Lys Met Gly Gly Lys Gly Val Asp Glu Ala Arg Ala
 385 390 395 400
 Phe Leu Lys Glu Tyr Phe Ala His His Gly Gly Ala Phe Phe Glu Cys
 405 410 415
 Asn Ala Glu Glu Thr Gln Ala Ala Met Leu His Arg Phe Ala Val Ala
 420 425 430
 Ser Ala Ala Ile Arg Tyr Arg Ala Val His Asp Asp Glu Val Glu Asp
 435 440 445
 Leu Val Ala Leu Asp Ile Ala Leu Arg Arg Asp Asp Arg Asp Trp Phe
 450 455 460
 Glu Lys Leu Pro Pro Glu Ile Asp Asn Lys Ile Ile His Lys Leu Tyr
 465 470 475 480
 Tyr Gly His Phe Met Cys His Val Phe His Gln Asp Tyr Ile Ile Lys
 485 490 495
 Lys Gly Asn Asp Cys Met Ala Leu Glu His Glu Met Leu His Leu Leu
 500 505 510
 Asp Gln Arg Gly Ala Gln Tyr Pro Ala Glu His Asn Val Gly His Leu
 515 520 525
 Tyr Glu Ala Lys Pro Ala Leu Lys Gln Phe Tyr Arg Lys Leu Asp Pro
 530 535 540
 Thr Asn Ser Phe Asn Pro Gly Val Gly Lys Thr Ser Lys Lys Lys Asn
 545 550 555 560

Trp Ala Glu

<210> 103
 <211> 356
 <212> PRT
 <213> Neisseria meningitidis

<400> 103
 Met Thr Lys His Ile Ala Ile Leu Arg Gly Asp Gly Ile Gly Pro Glu
 1 5 10 15
 Ile Val Ala Glu Thr Val Arg Val Leu Asp Lys Leu Ile Ala Gln Gly
 20 25 30
 Leu Asp Ala Gly Tyr Glu Tyr Ala Pro Leu Gly Gly Glu Ala Tyr Asp
 35 40 45

Glu Tyr Gly His Pro Tyr Pro Glu Phe Thr Gln¹³³ Asn Leu Cys Arg Lys
 50 55 60
 Ala Asp Ala Val Leu Leu Gly Ala Val Gly Ser Pro Gln Tyr Asp Asn
 65 70 75 80
 Leu Asp Arg Pro Leu Arg Pro Glu Arg Gly Leu Leu Ala Ile Arg Lys
 85 90 95
 Asp Leu Asn Leu Phe Ala Asn Leu Arg Pro Ala Val Leu Tyr Pro Glu
 100 105 110
 Leu Ala Asn Ala Ser Thr Leu Lys Pro Glu Ile Val Ala Gly Leu Asp
 115 120 125
 Ile Leu Ile Val Arg Glu Leu Thr Gly Asp Ile Tyr Phe Gly Glu Pro
 130 135 140
 Arg Gly Ile Arg Val Leu Glu Asn Gly Glu Arg Glu Gly Tyr Asn Thr
 145 150 155 160
 Met Lys Tyr Ser Glu Ser Glu Ile Arg Arg Ile Ala His Val Ala Phe
 165 170 175
 Gln Ser Ala Gln Lys Arg Ser Lys Lys Val Cys Ser Val Gly Lys Ala
 180 185 190
 Asn Val Leu Glu Thr Thr Glu Leu Trp Arg Glu Ile Phe Glu Glu Ile
 195 200 205
 Gly Lys Glu Tyr Pro Asp Val Glu Leu Ser His Met Tyr Val Asp Asn
 210 215 220
 Ala Ala Met Gln Leu Val Arg Ala Pro Lys Gln Phe Asp Val Ile Ala
 225 230 235 240
 Thr Gly Asn Ile Phe Gly Asp Ile Leu Ser Asp Glu Ala Ser Met Leu
 245 250 255
 Thr Gly Ser Ile Gly Met Leu Pro Ser Ala Ser Leu Asp Glu Asn Gly
 260 265 270
 Lys Gly Leu Tyr Glu Pro Ser His Gly Ser Ala Pro Asp Ile Ala Gly
 275 280 285
 Gln Asn Lys Ala Asn Pro Leu Ala Thr Ile Leu Ser Leu Ala Met Leu
 290 295 300
 Leu Arg Tyr Ser Leu Asn Asp Glu Ala Arg Ala Gln Gln Val Glu Asn
 305 310 315 320
 Ala Val Gln Lys Val Leu Gln Gln Gly Leu Arg Thr Ser Asp Ile Tyr
 325 330 335
 Glu Glu Gly Thr Lys Leu Val Ser Cys Ser Glu Met Gly Asp Ala Val
 340 345 350
 Leu Ala Ala Leu
 355

<210> 104

<211> 258

<212> PRT

<213> Neisseria meningitidis

<400> 104
 Met Ala Ala Phe Asn Thr Gln Lys Val Leu Ser Val His His Trp Thr
 1 5 10 15
 Asp Ala Tyr Phe Thr Phe Thr Cys Thr Arg Asp Glu Ser Leu Arg Phe
 20 25 30
 Glu Asn Gly Gln Phe Val Met Val Gly Leu Met Val Asp Gly Lys Pro
 35 40 45
 Leu Met Arg Ala Tyr Ser Val Ala Ser Ala Asn Trp Glu Glu His Leu
 50 55 60
 Glu Phe Phe Ser Ile Lys Val Gln Asp Gly Pro Leu Thr Ser Arg Leu
 65 70 75 80
 Gln His Leu Lys Val Gly Asp Asp Val Leu Ile Ser Lys Lys Pro Thr
 85 90 95
 Gly Thr Leu Val Ala Gly Asp Leu Asn Pro Gly Lys His Leu Tyr Leu
 100 105 110
 Leu Ser Thr Gly Thr Gly Ile Ala Pro Phe Leu Ser Ile Thr Lys Asp
 115 120 125
 Pro Glu Ile Tyr Glu Gln Phe Glu Lys Ile Ile Leu Val His Gly Val
 130 135 140
 Arg Tyr Lys Lys Asp Leu Ala Tyr Tyr Asp Arg Phe Thr Lys Glu Leu
 145 150 155 160
 Pro Glu His Glu Tyr Leu Gly Asp Leu Val Lys Glu Lys Leu Ile Tyr
 165 170 175
 Tyr Pro Ile Val Ser Arg Glu Glu Phe Glu His His Gly Arg Leu Thr
 180 185 190
 Asp Leu Met Val Ser Gly Lys Leu Phe Glu Asp Ile Gly Leu Pro Lys
 195 200 205
 Ile Asn Pro Gln Asp Asp Arg Ala Met Leu Cys Gly Ser Pro Ala Met
 210 215 220
 Leu Lys Asp Thr Cys Lys Val Leu Asp Asp Phe Gly Leu Thr Val Ser
 225 230 235 240
 Pro Lys Thr Gly Val Arg Gly Asp Tyr Leu Ile Glu Arg Ala Phe Val
 245 250 255

Asp Gln

<210> 105
 <211> 469
 <212> PRT
 <213> Neisseria meningitidis

<400> 105
 Met Lys Tyr Ile Ser Thr Arg Gly Glu Thr Ala His Lys Pro Phe Ser
 1 5 10 15
 Glu Val Leu Leu Met Gly Leu Ala Pro Asp Gly Gly Leu Met Leu Pro
 20 25 30

Glu His Tyr Pro Gln Ile Gly Arg Glu Thr Leu Asp Lys Trp Arg Gly
 35 40 45
 Leu Ala Tyr Pro Glu Leu Ala Phe Glu Ile Met Arg Leu Phe Val Thr
 50 55 60
 Asp Ile Pro Glu Asp Asp Leu Arg Asp Ile Leu Asn Arg Thr Tyr Thr
 65 70 75 80
 Glu Ala Ala Phe Gly Thr Lys Glu Ile Thr Pro Val Arg Thr Leu Ser
 85 90 95
 Asp Gly Ile Lys Ile Gln Ala Leu Ser Asn Gly Pro Thr Leu Ala Phe
 100 105 110
 Lys Asp Met Ala Met Gln Phe Leu Gly Asn Ala Phe Glu Tyr Val Leu
 115 120 125
 Asn Lys Glu Gly Lys Lys Leu Asn Ile Leu Gly Ala Thr Ser Gly Asp
 130 135 140
 Thr Gly Ser Ala Ala Glu Tyr Ala Leu Arg Gly Lys Lys Gly Val Asn
 145 150 155 160
 Val Phe Met Leu Ser Pro Asp Gly Lys Met Ser Ala Phe Gln Arg Ala
 165 170 175
 Gln Met Tyr Ser Leu Gln Asp Glu Asn Ile His Asn Ile Ala Val Lys
 180 185 190
 Gly Met Phe Asp Asp Cys Gln Asp Ile Val Lys Ala Val Gln Asn Asp
 195 200 205
 Ala Ala Phe Lys Glu Lys Tyr His Ile Gly Thr Val Asn Ser Ile Asn
 210 215 220
 Trp Gly Arg Ile Val Ala Gln Val Val Tyr Tyr Phe Ala Gly Tyr Phe
 225 230 235 240
 Asn Ala Thr Ser Ser Asn Asp Glu Thr Val Ser Phe Cys Val Pro Ser
 245 250 255
 Gly Asn Phe Gly Asn Val Cys Ala Gly His Ile Ala Lys Gln Met Gly
 260 265 270
 Leu Pro Ile Arg Arg Leu Ile Val Ala Thr Asn Glu Asn Asp Val Leu
 275 280 285
 Asp Glu Phe Phe Lys Thr Gly Ala Tyr Arg Pro Arg Asn Ser Ala His
 290 295 300
 Thr Tyr Val Thr Ser Ser Pro Ser Met Asp Ile Ser Lys Ala Ser Asn
 305 310 315 320
 Phe Glu Arg Phe Val Phe Asp Leu Met Asp Arg Asp Pro Ala Glu Ile
 325 330 335
 Asn Thr Leu Trp Ala Glu Val Ala Ala Gly Lys Gly Phe Asp Leu Arg
 340 345 350
 Phe Ala Leu Asp Lys Val Gly Gly Lys Tyr Gly Phe Thr Ser Gly Lys
 355 360 365

Ser Thr His Ala Asp Arg Leu Ala Thr Ile Lys¹³⁶ Gln Val Tyr Glu Gln
 370 375 380
 Asp Gln Glu Leu Ile Asp Pro His Thr Ala Asp Gly Val Lys Val Ala
 385 390 395 400
 Arg Glu Val Arg Glu Glu Gly Glu Met Val Val Cys Leu Glu Thr Ala
 405 410 415
 Leu Ala Ala Lys Phe Asp Ala Thr Ile Arg Glu Ala Val Gly Asp Ala
 420 425 430
 Ala Ile Pro Arg Pro Ala Ala Leu Glu Gly Leu Glu Asn Leu Pro Gln
 435 440 445
 Arg Val Gln Thr Val Pro Asn Ser Ala Asp Ala Val Lys Gly Ile Ile
 450 455 460
 Glu Gln Thr Leu Ala
 465

<210> 106
 <211> 272
 <212> PRT
 <213> Neisseria meningitidis

<400> 106
 Met Lys Lys Thr Val Phe Thr Cys Ala Met Ile Ala Leu Thr Gly Thr
 1 5 10 15
 Ala Ala Ala Ala Gln Glu Leu Gln Thr Ala Asn Glu Phe Thr Val His
 20 25 30
 Thr Asp Leu Ser Ser Ile Ser Ser Thr Arg Ala Phe Leu Lys Glu Lys
 35 40 45
 His Lys Ala Ala Lys His Ile Ser Val Arg Ala Asp Ile Pro Phe Asp
 50 55 60
 Ala Asn Gln Gly Ile Arg Leu Glu Ala Gly Phe Gly Arg Ser Lys Lys
 65 70 75 80
 Asn Ile Ile Asn Leu Glu Thr Asp Glu Asn Lys Leu Gly Lys Thr Lys
 85 90 95
 Asn Val Lys Leu Pro Thr Gly Val Pro Glu Asn Arg Ile Asp Leu Tyr
 100 105 110
 Thr Gly Tyr Thr Tyr Thr Gln Thr Leu Ser Asp Ser Leu Asn Phe Arg
 115 120 125
 Val Gly Ala Gly Leu Gly Phe Glu Ser Ser Lys Asp Ser Ile Lys Thr
 130 135 140
 Thr Lys His Thr Leu His Ser Ser Arg Gln Ser Trp Leu Ala Lys Val
 145 150 155 160
 His Ala Asp Leu Leu Ser Gln Leu Gly Asn Gly Trp Tyr Ile Asn Pro
 165 170 175
 Trp Ser Glu Val Lys Phe Asp Leu Asn Ser Arg Tyr Lys Leu Asn Thr
 180 185 190
 Gly Val Thr Asn Leu Lys Lys Asp Ile Asn Gln Lys Thr Asn Gly Trp

195 200 137 205
 Gly Phe Gly Leu Gly Ala Asn Ile Gly Lys Lys Leu Gly Glu Ser Ala
 210 215 220
 Ser Ile Glu Ala Gly Pro Phe Tyr Lys Gln Arg Thr Tyr Lys Glu Ser
 225 230 235 240
 Gly Glu Phe Ser Val Thr Thr Lys Ser Gly Asp Val Ser Leu Thr Ile
 245 250 255
 Pro Lys Thr Ser Ile Arg Glu Tyr Gly Leu Arg Val Gly Ile Lys Phe
 260 265 270

<210> 107
 <211> 517
 <212> PRT
 <213> Neisseria meningitidis

<400> 107
 Met Thr Gln Thr Asn Arg Val Ile Ile Phe Asp Thr Thr Leu Arg Asp
 1 5 10 15
 Gly Glu Gln Ser Pro Gly Ala Ala Met Thr Lys Glu Glu Lys Ile Arg
 20 25 30
 Val Ala Arg Gln Leu Glu Lys Leu Gly Val Asp Ile Ile Glu Ala Gly
 35 40 45
 Phe Ala Ala Ala Ser Pro Gly Asp Phe Glu Ala Val Asn Ala Ile Ala
 50 55 60
 Lys Thr Ile Thr Lys Ser Thr Val Cys Ser Leu Ser Arg Ala Ile Glu
 65 70 75 80
 Arg Asp Ile Arg Gln Ala Gly Glu Ala Val Ala Pro Ala Pro Lys Lys
 85 90 95
 Arg Ile His Thr Phe Ile Ala Thr Ser Pro Ile His Met Glu Tyr Lys
 100 105 110
 Leu Lys Met Lys Pro Lys Gln Val Ile Glu Ala Ala Val Lys Ala Val
 115 120 125
 Lys Ile Ala Arg Glu Tyr Thr Asp Asp Val Glu Phe Ser Cys Glu Asp
 130 135 140
 Ala Leu Arg Ser Glu Ile Asp Phe Leu Ala Glu Ile Cys Gly Ala Val
 145 150 155 160
 Ile Glu Ala Gly Ala Thr Thr Ile Asn Ile Pro Asp Thr Val Gly Tyr
 165 170 175
 Ser Ile Pro Tyr Lys Thr Glu Glu Phe Phe Arg Glu Leu Ile Ala Lys
 180 185 190
 Thr Pro Asn Gly Gly Lys Val Val Trp Ser Ala His Cys His Asn Asp
 195 200 205
 Leu Gly Leu Ala Val Ala Asn Ser Leu Ala Ala Leu Lys Gly Gly Ala
 210 215 220
 Arg Gln Val Glu Cys Thr Val Asn Gly Leu Gly Glu Arg Ala Gly Asn

225		230		138 235		240
Ala Ser Val Glu	Glu Ile Val Met Ala Leu Lys Val Arg His Asp Leu					
	245			250		255
Phe Gly Leu Glu	Thr Gly Ile Asp Thr Thr Gln Ile Val Pro Ser Ser					
	260			265		270
Lys Leu Val Ser	Thr Ile Thr Gly Tyr Pro Val Gln Pro Asn Lys Ala					
	275			280		285
Ile Val Gly Ala	Asn Ala Phe Ser His Glu Ser Gly Ile His Gln Asp					
	290			295		300
Gly Val Leu Lys	His Arg Glu Thr Tyr Glu Ile Met Ser Ala Glu Ser					
	305			310		315
Val Gly Trp Ala	Thr Asn Arg Leu Ser Leu Gly Lys Leu Ser Gly Arg					
	325			330		335
Asn Ala Phe Lys	Thr Lys Leu Ala Asp Leu Gly Ile Glu Leu Glu Ser					
	340			345		350
Glu Glu Ala Leu	Asn Ala Ala Phe Ala Arg Phe Lys Glu Leu Ala Asp					
	355			360		365
Lys Lys Arg Glu	Ile Phe Asp Glu Asp Leu His Ala Leu Val Ser Asp					
	370			375		380
Glu Met Gly Ser	Met Asn Ala Glu Ser Tyr Lys Phe Ile Ser Gln Lys					
	385			390		395
Ile Ser Thr Glu	Thr Gly Glu Glu Pro Arg Ala Asp Ile Val Phe Ser					
	405			410		415
Ile Lys Gly Glu	Glu Lys Arg Ala Ser Ala Thr Gly Ser Gly Pro Val					
	420			425		430
Asp Ala Ile Phe	Lys Ala Ile Glu Ser Val Ala Gln Ser Gly Ala Ala					
	435			440		445
Leu Gln Ile Tyr	Ser Val Asn Ala Val Thr Gln Gly Thr Glu Ser Gln					
	450			455		460
Gly Glu Thr Ser	Val Arg Leu Ala Arg Gly Asn Arg Val Val Asn Gly					
	465			470		475
Gln Gly Ala Asp	Thr Asp Val Leu Val Ala Thr Ala Lys Ala Tyr Leu					
	485			490		495
Ser Ala Leu Ser	Lys Leu Glu Phe Ser Ala Ala Lys Pro Lys Ala Gln					
	500			505		510
Gly Ser Gly Thr	Ile					
	515					

<210> 108
 <211> 376
 <212> PRT
 <213> Neisseria meningitidis

<400> 108
 Met Ile Lys Ile Ser Thr Arg Phe Asp Ala Gly Ser Val Val Val Lys
 1 5 10 15

Asp Leu Thr Asp Pro Ser Asn Ile Arg Leu Ala Leu Arg Pro Asp Asn
 20 25 30
 Ala Ser Asp Phe Ala Gln Trp Phe Tyr Phe Arg Leu Gln Gly Ala Ala
 35 40 45
 Tyr Gln Asn Cys Ile Met His Phe Glu Asn Ala Ala Glu Ala Ala Tyr
 50 55 60
 Pro Lys Gly Trp Glu Gly Tyr Gln Ala Cys Ala Ser Tyr Asp Arg Arg
 65 70 75 80
 Asn Trp Phe Arg Val Pro Thr Ser Tyr Glu Asn Gly Val Leu Thr Val
 85 90 95
 Asn His Thr Pro Leu Ser Asn Ser Val Tyr Tyr Ala Tyr Phe Glu Pro
 100 105 110
 Tyr Ser Glu Glu Gln His Leu Asn Leu Leu Gly Asp Ala Gln Gly Ser
 115 120 125
 Gly Leu Cys Arg Ile Asp Asp Leu Gly Ser Thr Val Gln Gly Arg Asp
 130 135 140
 Ile Asn Leu Leu Thr Ile Gly Asn Gln Val Glu Ser Asp Leu Lys Ile
 145 150 155 160
 Trp Ile Thr Ala Arg Gln His Pro Gly Glu Thr Met Ala Glu Trp Phe
 165 170 175
 Ile Glu Gly Leu Leu Gly Arg Leu Leu Asp Pro Gln Asp Pro Thr Ala
 180 185 190
 Arg Ala Leu Leu Asp Arg Ala Thr Phe Tyr Ile Val Pro Asn Met Asn
 195 200 205
 Pro Asp Gly Ser Ala Leu Gly Asn Leu Arg Thr Asn Ala Ala Gly Ala
 210 215 220
 Asn Leu Asn Arg Glu Trp Glu Asn Pro Thr Val Glu Lys Ser Pro Glu
 225 230 235 240
 Val Phe Phe Val Arg Glu Lys Met Leu Glu Thr Gly Val Asp Leu Phe
 245 250 255
 Leu Asp Ile His Gly Asp Glu Gly Leu Pro Phe Val Phe Val Ala Gly
 260 265 270
 Thr Glu Gly Val Pro Asn Tyr Asn Pro Arg Ile Ala Ala Leu Glu Ala
 275 280 285
 Gln Phe Lys Asn Ala Leu Leu Asn Ala Ser Pro Asp Phe Gln Asp Glu
 290 295 300
 Tyr Gly Tyr Glu Lys Asp Ala Pro Gly Glu Ala Asn Met Thr Leu Ala
 305 310 315 320
 Thr Asn Trp Val Gly Asn Arg Phe Asn Cys Leu Ala Tyr Thr Leu Glu
 325 330 335
 Met Pro Phe Lys Asp Asn Ala Asn Leu Pro Asp Asp Asp Phe Gly Trp
 340 345 350

Asn Gly Gln Arg Ser Leu Arg Leu Gly Glu Ala Ala Leu Ser Ala Ile
 355 360 365 140

Leu Asn Val Ile Gly Asp Leu Arg
 370 375

<210> 109
 <211> 239
 <212> PRT
 <213> Neisseria meningitidis

<400> 109
 Met Ala Thr Leu Ser Asp Lys Thr Ile Leu Val Thr Gly Ala Ser Gln
 1 5 10 15

Gly Leu Gly Glu Gln Val Ala Lys Ala Tyr Ala Ala Ala Gly Ala Thr
 20 25 30

Val Ile Leu Val Ala Arg His Gln Lys Lys Leu Glu Lys Val Tyr Asp
 35 40 45

Ala Ile Val Glu Ala Gly Tyr Pro Glu Pro Phe Ala Ile Cys Phe Asp
 50 55 60

Leu Ile Ser Ala Glu Glu Lys Glu Phe Glu His Phe Ala Ala Thr Ile
 65 70 75 80

Ala Glu Ala Thr Gln Gly Lys Leu Asp Gly Ile Val His Cys Ala Gly
 85 90 95

Tyr Phe Tyr Ala Leu Ser Pro Leu Asp Phe Gln Thr Val Ala Glu Trp
 100 105 110

Val Asn Gln Tyr Arg Ile Asn Thr Val Ala Pro Met Gly Leu Thr Arg
 115 120 125

Ala Leu Phe Pro Leu Leu Lys Gln Ser Pro Asp Ala Ser Val Ile Phe
 130 135 140

Val Gly Glu Ser His Gly Glu Thr Pro Lys Ala Tyr Trp Gly Gly Phe
 145 150 155 160

Gly Ala Ser Lys Ala Ala Leu Asn Tyr Leu Cys Lys Val Ala Ala Asp
 165 170 175

Glu Trp Glu Arg Phe Gly Asn Leu Arg Ala Asn Val Leu Val Pro Gly
 180 185 190

Pro Ile Asn Ser Pro Gln Arg Ile Lys Ser His Pro Gly Glu Ala Lys
 195 200 205

Ser Glu Arg Lys Ser Tyr Gly Asp Val Leu Pro Ala Phe Val Trp Trp
 210 215 220

Ala Ser Ala Glu Ser Lys Gly Arg Ser Gly Glu Ile Val Tyr Leu
 225 230 235

<210> 110
 <211> 620
 <212> PRT
 <213> Neisseria meningitidis

<400> 110
 Met Ala Leu Leu Gln Ile Ser Glu Pro Gly Met Ser Ala Ala Pro His

1	5	10	141	15
Arg His Arg	Leu Ala Ala	Gly Ile Asp	Leu Gly Thr Thr	Asn Ser Leu
	20	25		30
Val Ala Thr	Val Arg Ser	Gly Ser Ala	Ala Cys Leu	Pro Asp Ala Glu
	35	40		45
Gly Arg Val	Thr Leu Pro	Ser Val Val	Arg Tyr Leu	Glu Asn Gly Gly
	50	55		60
Ile Glu Val	Gly Lys Thr	Ala Leu Ser	Ala Gln Lys	Thr Asp Pro Leu
	65	70		80
Asn Thr Val	Ser Ser Ala	Lys Arg Leu	Ile Gly Arg	Thr Leu Ala Asp
	85	90		95
Leu His Gln	Asn Thr His	Tyr Leu Pro	Tyr Arg Phe	Gly Asp Asn Gln
	100	105		110
Arg Val Ile	Glu Leu His	Thr Arg Gln	Gly Val Lys	Thr Pro Val Glu
	115	120		125
Val Ser Ala	Glu Ile Leu	Lys Thr Leu	Lys Ser Arg	Ala Glu Glu Thr
	130	135		140
Leu Gly Gly	Asp Leu Val	Gly Val Val	Ile Thr Val	Pro Ala Tyr Phe
	145	150		155
Asp Asp Ala	Gln Arg Gln	Ala Thr Lys	Asp Ala Ala	Arg Leu Ala Gly
	165	170		175
Leu Asn Val	Leu Arg Leu	Leu Asn Glu	Pro Thr Ala	Ala Ala Ile Ala
	180	185		190
Tyr Gly Leu	Asp Asn Ala	Ser Glu Gly	Thr Phe Val	Val Tyr Asp Leu
	195	200		205
Gly Gly Gly	Thr Phe Asp	Val Ser Val	Leu Gln Leu	Thr Lys Gly Leu
	210	215		220
Phe Glu Val	Lys Ala Thr	Gly Gly Asn	Ser Ala Leu	Gly Gly Asp Asp
	225	230		235
Phe Asp His	Arg Leu Phe	Cys Arg Leu	Leu Glu Gln	Asn Gly Leu Ser
	245	250		255
Gln Leu Asn	Glu Gln Asp	Ser Gln Leu	Leu Leu Ser	Leu Val Arg Ala
	260	265		270
Ala Lys Glu	Gln Leu Thr	Thr Gln Thr	Glu Ala Arg	Ile Gln Ala Thr
	275	280		285
Leu Ser Asp	Gly Met Ala	Ile Asp Thr	Ser Ile Ser	Arg Ala Glu Phe
	290	295		300
His Asn Leu	Thr Gln His	Leu Val Met	Lys Thr Leu	Glu Pro Val Thr
	305	310		315
Gln Ala Leu	Lys Asp Ala	Gly Val Gly	Lys Asn Glu	Val Lys Gly Val
	325	330		335
Ile Met Val	Gly Gly Ser	Thr Arg Met	Leu His Val	Gln Gln Ala Val
	340	345		350

Ala Thr Phe Phe Gly Gln Thr Pro Leu Asn Asn Leu Asn Pro Asp Glu
 355 360 365
 Val Val Ala Leu Gly Ala Ala Ile Gln Ala Asn Val Leu Ala Gly Asn
 370 375 380
 Lys Thr Asp Gly Glu Trp Leu Leu Leu Asp Val Thr Pro Leu Ser Leu
 385 390 395 400
 Gly Leu Glu Thr Tyr Gly Gly Leu Ala Glu Lys Ile Ile Pro Arg Asn
 405 410 415
 Ser Thr Ile Pro Thr Ala Arg Ala Gln Asp Phe Thr Thr Phe Lys Asp
 420 425 430
 Gly Gln Thr Ala Met Thr Ile His Val Val Gln Gly Glu Arg Glu Leu
 435 440 445
 Val Ala Asp Cys Arg Ser Leu Ala Lys Phe Thr Leu Arg Gly Ile Pro
 450 455 460
 Pro Met Ala Ala Gly Ala Ala Arg Ile Arg Val Thr Phe Gln Ile Asp
 465 470 475 480
 Ala Asp Gly Leu Leu Ser Val Ser Ala Gln Glu Gln Ser Thr Gly Val
 485 490 495
 Gln Ala Gln Ile Glu Val Lys Pro Ser Tyr Gly Leu Asp Asp Asp Thr
 500 505 510
 Ile Thr Gln Met Leu Lys Asp Ser Met Ser Asn Ala Ala Glu Asp Met
 515 520 525
 Ala Ala Arg Ala Arg Ala Glu Ala Val Val Glu Ala Glu Ser Leu Thr
 530 535 540
 Asp Ala Val Asn Ala Ala Leu Glu Leu Asp Ser Asp Leu Leu Asp Ala
 545 550 555 560
 Glu Glu Leu Gln Gln Ile Arg Gln Gly Ile Ala Asp Leu Gln Gly Arg
 565 570 575
 Leu Lys Asp Gly Lys Ala Glu Asp Ile Arg Ala Ala Ala Ala Lys Leu
 580 585 590
 Gly Ser Ile Thr Asp Asn Phe Ala Ala Lys Arg Met Asn Arg Asn Ile
 595 600 605
 Gln Arg Ala Leu Thr Gly Gln Ser Val Asp Asn Ile
 610 615 620
 <210> 111
 <211> 619
 <212> PRT
 <213> Neisseria meningitidis
 <400> 111
 Met Pro Glu Tyr Arg Ser Lys Thr Ser Thr His Gly Arg Asn Met Ala
 1 5 10 15
 Gly Ala Arg Ala Leu Trp Arg Ala Thr Gly Val Met Glu Thr Asp Phe
 20 25 30

Gly Lys Pro Ile Ile Ala Val Ala Asn Ser Phe Thr Gln Phe Val Pro
 35 40 143 45
 Gly His Val His Leu His Asn Met Gly Gln Leu Val Ala Arg Glu Ile
 50 55 60
 Glu Lys Ala Gly Ala Ile Ala Lys Glu Phe Asn Thr Ile Ala Ile Asp
 65 70 75 80
 Asp Gly Ile Ala Met Gly His Ser Gly Met Leu Tyr Ser Leu Pro Ser
 85 90 95
 Arg Asp Leu Ile Ala Asp Ser Ile Glu Tyr Met Val Asn Ala His Cys
 100 105 110
 Ala Asp Ala Leu Val Cys Ile Ser Asn Cys Asp Lys Ile Thr Pro Gly
 115 120 125
 Met Leu Ile Ala Ala Met Arg Leu Asn Ile Pro Thr Ile Phe Val Ser
 130 135 140
 Gly Gly Pro Met Glu Ala Gly Lys Val Ile Gly Val Ala Asn Ile Gln
 145 150 155 160
 Pro Glu Arg Arg Leu Asp Leu Ile Asp Ala Met Ile Glu Ser Ala Asp
 165 170 175
 Asp Asn Val Ser Asn Arg Gln Val Glu Glu Val Glu Gln Asn Ala Cys
 180 185 190
 Pro Thr Cys Gly Ser Cys Ser Gly Met Phe Thr Ala Asn Ser Met Asn
 195 200 205
 Cys Leu Thr Glu Ala Leu Gly Leu Ser Leu Pro Gly Asn Gly Ser Tyr
 210 215 220
 Leu Ala Thr His Ala Gly Arg Lys Glu Leu Phe Leu Glu Ala Gly Arg
 225 230 235 240
 Met Ile Val Glu Ile Thr Lys Arg Tyr Tyr Glu Gln Asn Asp Glu Thr
 245 250 255
 Val Leu Pro Arg Ser Ile Ala Thr Lys Lys Ala Phe Glu Asn Ala Met
 260 265 270
 Thr Met Asp Ile Ala Met Gly Gly Ser Thr Asn Thr Ile Leu His Leu
 275 280 285
 Leu Ala Val Ala Asn Glu Ala Gly Val Asp Phe Lys Met Ala Asp Ile
 290 295 300
 Asp Arg Leu Ser Arg Val Val Pro Cys Ile Cys Lys Thr Ala Pro Asn
 305 310 315 320
 Asn His Asp Tyr Tyr Met Glu Asp Val His Arg Ala Gly Gly Ile Phe
 325 330 335
 Ala Ile Leu Lys Glu Leu Asp Lys Ala Gly Lys Leu His Thr Asp Val
 340 345 350
 His Thr Ile His Ala Pro Thr Leu Lys Asp Ala Ile Glu Gln Trp Asp
 355 360 365
 Val Thr Asn Pro Glu Asn Thr Arg Ala Ile Glu Arg Phe Lys Ala Ala

370 375 144 380
 Pro Gly Gly Val Arg Thr Thr Gln Ala Phe Ser Gln Asn Arg Met Trp
 385 390 395 400
 Lys Thr Leu Asp Leu Asp Arg Glu Lys Gly Cys Ile Arg Asp Val Ala
 405 410 415
 His Ala Tyr Ser Gln Asp Gly Gly Leu Ala Val Leu Phe Gly Asn Ile
 420 425 430
 Ala Glu Arg Gly Cys Val Val Lys Thr Ala Gly Val Asp Glu Ser Ile
 435 440 445
 Leu Lys Phe Thr Gly Arg Ala Arg Val Phe Glu Ser Gln Glu Asp Ala
 450 455 460
 Val Glu Gly Ile Leu Gly Asn Gln Ile Val Ala Gly Asp Ile Val Ile
 465 470 475 480
 Ile Arg Tyr Glu Gly Pro Lys Gly Gly Pro Gly Met Gln Glu Met Leu
 485 490 495
 Tyr Pro Thr Ser Tyr Leu Lys Ser Lys Gly Leu Gly Lys Ala Cys Ala
 500 505 510
 Leu Leu Thr Asp Gly Arg Phe Ser Gly Gly Thr Ser Gly Leu Ser Ile
 515 520 525
 Gly His Ala Ser Pro Glu Ala Ala Glu Gly Gly Ala Ile Gly Leu Val
 530 535 540
 His Glu Gly Asp Thr Val Glu Ile Asp Ile Pro Asn Arg Ser Ile His
 545 550 555 560
 Leu Ala Ile Ser Asp Glu Glu Leu Ala Ala Arg Arg Ala Glu Met Glu
 565 570 575
 Ala Arg Gly Ser Lys Ala Trp Lys Pro Lys Asn Arg Asp Arg Tyr Val
 580 585 590
 Ser Ala Ala Leu Arg Ala Tyr Gly Ala Met Ala Thr Ser Ala Asp Lys
 595 600 605
 Gly Ala Val Arg Asp Val Ala Gln Ile Glu Arg
 610 615

<210> 112
 <211> 487
 <212> PRT
 <213> Neisseria meningitidis

<400> 112
 Met Arg Ile Val Glu Lys Ala Tyr Thr Phe Asp Asp Val Leu Leu Val
 1 5 10 15
 Pro Ala His Ser Thr Val Leu Pro Arg Asp Val Lys Leu Gln Thr Lys
 20 25 30
 Leu Thr Arg Glu Ile Thr Leu Asn Leu Pro Leu Leu Ser Ala Ala Met
 35 40 45
 Asp Thr Val Thr Glu Ala Arg Leu Ala Ile Ser Met Ala Gln Glu Gly
 50 55 60

Gly Ile Gly Ile Ile His Lys Asn Met Pro Pro Glu Met Gln Ala Arg
 65 70 75 80
 Ala Val Ser Lys Val Lys Arg His Glu Ser Gly Val Val Lys Asp Pro
 85 90 95
 Val Thr Val Ala Pro Thr Thr Leu Ile Arg Glu Val Leu Glu Met Arg
 100 105 110
 Ala Gln Arg Lys Arg Lys Met Ser Gly Leu Pro Val Val Glu Asn Gly
 115 120 125
 Lys Val Val Gly Ile Val Thr Asn Arg Asp Leu Arg Phe Glu Asn Arg
 130 135 140
 Val Asp Leu Pro Val Ser Ala Ile Met Thr Pro Arg Glu Arg Leu Val
 145 150 155 160
 Thr Val Pro Glu Gly Thr Ser Ile Asp Glu Ala Arg Glu Leu Met His
 165 170 175
 Thr His Lys Val Glu Arg Val Leu Val Leu Asn Glu Lys Asp Glu Leu
 180 185 190
 Lys Gly Leu Ile Thr Val Lys Asp Ile Leu Lys Thr Thr Glu Phe Pro
 195 200 205
 Asn Ala Asn Lys Asp Ser Glu Gly Arg Leu Arg Val Gly Ala Ala Val
 210 215 220
 Gly Thr Gly Gly Asp Thr Glu Glu Arg Val Lys Ala Leu Val Glu Ala
 225 230 235 240
 Gly Val Asp Val Ile Val Val Asp Thr Ala His Gly His Ser Gln Gly
 245 250 255
 Val Ile Asp Arg Val Arg Trp Val Lys Glu Thr Tyr Pro His Ile Gln
 260 265 270
 Val Ile Gly Gly Asn Ile Ala Thr Ala Lys Ala Ala Leu Asp Leu Val
 275 280 285
 Ala Ala Gly Ala Asp Ala Val Lys Val Gly Ile Gly Pro Gly Ser Ile
 290 295 300
 Cys Thr Thr Arg Ile Val Ala Gly Val Gly Val Pro Gln Leu Thr Ala
 305 310 315 320
 Ile His Asn Val Ala Glu Ala Leu Lys Gly Thr Gly Val Pro Leu Ile
 325 330 335
 Ala Asp Gly Gly Ile Arg Phe Ser Gly Asp Ile Ala Lys Ala Leu Ala
 340 345 350
 Ala Gly Ala Tyr Ser Val Met Leu Gly Gly Met Phe Ala Gly Thr Glu
 355 360 365
 Glu Ala Pro Gly Glu Ile Glu Leu Tyr Gln Gly Arg Ser Tyr Lys Ser
 370 375 380
 Tyr Arg Gly Met Gly Ser Leu Gly Ala Met Ser Gln Gly Ser Ala Asp
 385 390 395 400

Arg Tyr Phe Gln Asp Lys Thr Asp Ser Thr Asp Lys Tyr Val Pro Glu
 405 146 410 415
 Gly Ile Glu Gly Arg Val Pro Tyr Lys Gly Pro Ile Val Asn Ile Ile
 420 425 430
 His Gln Leu Thr Gly Gly Leu Arg Ser Ser Met Gly Tyr Leu Gly Cys
 435 440 445
 Ala Asn Ile Ala Glu Met His Glu Lys Ala Glu Phe Val Glu Ile Thr
 450 455 460
 Ser Ala Gly Met Ser Glu Ser His Val His Asp Val Gln Ile Thr Lys
 465 470 475 480
 Glu Ala Pro Asn Tyr His Arg
 485

<210> 113
 <211> 157
 <212> PRT
 <213> Neisseria meningitidis

<400> 113
 Met Lys Gly Asp Arg Leu Val Ile Arg Glu Leu Asn Lys Asn Leu Gly
 1 5 10 15
 Leu Leu Leu Val Thr Ile Asn Gln Tyr Phe Leu His Ala Arg Ile Leu
 20 25 30
 Lys Asn Trp Gly Phe Glu Glu Leu Gly Glu His Phe Phe Lys Gln Ser
 35 40 45
 Ile Val Glu Met Lys Ala Ala Asp Asp Leu Ile Glu Arg Ile Leu Phe
 50 55 60
 Leu Glu Gly Leu Pro Asn Leu Gln Glu Leu Gly Lys Leu Leu Ile Gly
 65 70 75 80
 Glu Ser Thr Glu Glu Ile Ile Ala Cys Asp Leu Thr Lys Glu Gln Glu
 85 90 95
 Lys His Glu Ala Leu Leu Ala Ala Ile Ala Thr Ala Glu Ala Gln Gln
 100 105 110
 Asp Tyr Val Ser Arg Asp Leu Leu Glu Lys Gln Lys Asp Thr Asn Glu
 115 120 125
 Glu His Ile Asp Trp Leu Glu Thr Gln Gln Glu Leu Ile Gly Lys Ile
 130 135 140
 Gly Leu Pro Asn Tyr Leu Gln Thr Ala Ala Gln Glu Asp
 145 150 155

<210> 114
 <211> 435
 <212> PRT
 <213> Neisseria meningitidis

<400> 114
 Met Lys Pro Val Asn Ile Gly Leu Leu Gly Leu Gly Thr Val Gly Gly
 1 5 10 15
 Gly Thr Ala Ala Val Leu Arg Asp Asn Ala Glu Glu Ile Ser Arg Arg

147															
20				25				30							
Leu	Gly	Arg 35	Glu	Ile	Arg	Ile	Ser 40	Ala	Val	Cys	Asp	Leu 45	Ser	Glu	Glu
Lys	Ala 50	Arg	Gln	Thr	Cys	Pro 55	Ser	Ala	Ala	Phe	Val 60	Lys	Asp	Pro	Phe
Glu 65	Leu	Val	Ala	Arg	Glu 70	Asp	Val	Asp	Val	Val 75	Val	Glu	Leu	Phe	Gly 80
Gly	Thr	Gly	Ile	Ala 85	Lys	Asp	Ala	Val	Leu 90	Lys	Ala	Ile	Glu	Asn 95	Gly
Lys	His	Ile	Val 100	Thr	Ala	Asn	Lys	Lys 105	Leu	Leu	Ala	Glu	Tyr 110	Gly	Asn
Glu	Ile	Phe 115	Pro	Leu	Ala	Glu	Lys 120	Gln	Asn	Val	Ile	Val 125	Gln	Phe	Glu
Ala	Ala 130	Val	Ala	Gly	Gly	Ile 135	Pro	Ile	Ile	Lys	Ala 140	Leu	Arg	Glu	Gly
Leu 145	Ala	Ala	Asn	Arg	Ile 150	Lys	Ser	Ile	Ala	Gly 155	Ile	Ile	Asn	Gly	Thr 160
Ser	Asn	Phe	Ile	Leu 165	Ser	Glu	Met	Arg	Glu 170	Lys	Gly	Ser	Ala	Phe 175	Ala
Asp	Val	Leu	Lys 180	Glu	Ala	Gln	Ala	Leu 185	Gly	Tyr	Ala	Glu	Ala 190	Asp	Pro
Thr	Phe	Asp 195	Ile	Glu	Gly	Asn	Asp 200	Ala	Gly	His	Lys	Ile 205	Thr	Ile	Met
Ser	Ala 210	Leu	Ala	Phe	Gly	Thr 215	Pro	Met	Asn	Phe	Ser 220	Ala	Cys	Tyr	Leu
Glu 225	Gly	Ile	Ser	Lys	Leu 230	Asp	Ser	Arg	Asp	Ile 235	Lys	Tyr	Ala	Glu	Glu 240
Leu	Gly	Tyr	Arg	Ile 245	Lys	Leu	Leu	Gly	Ile 250	Thr	Arg	Lys	Thr	Gly 255	Lys
Gly	Ile	Glu	Leu 260	Arg	Val	His	Pro	Thr 265	Leu	Ile	Pro	Glu	Ser 270	Arg	Leu
Leu	Ala	Asn 275	Val	Asn	Gly	Val	Met 280	Asn	Ala	Val	Arg	Val 285	Asn	Ala	Asp
Met	Val 290	Gly	Glu	Thr	Leu	Tyr 295	Tyr	Gly	Ala	Gly	Ala 300	Gly	Ala	Leu	Pro
Thr 305	Ala	Ser	Ala	Val	Val 310	Ala	Asp	Ile	Ile	Asp 315	Ile	Ala	Arg	Leu	Val 320
Glu	Ala	Asp	Thr	Ala 325	His	Arg	Val	Pro	His 330	Leu	Ala	Phe	Gln	Pro 335	Ala
Gln	Val	Gln	Ala 340	Gln	Thr	Ile	Leu	Pro 345	Met	Asp	Glu	Ile	Thr 350	Ser	Ser
Tyr	Tyr	Leu 355	Arg	Val	Gln	Ala	Lys 360	Asp	Glu	Pro	Gly	Thr 365	Leu	Gly	Gln

Ile Ala Ala Leu Leu Ala Gln Glu Asn Val Ser Ile Glu Ala Leu Ile
 370 375 380
 Gln Lys Gly Val Ile Asp Gln Thr Thr Ala Glu Ile Val Ile Leu Thr
 385 390 395 400
 His Ser Thr Val Glu Lys His Ile Lys Ser Ala Ile Ala Ala Ile Glu
 405 410 415
 Ala Leu Asp Cys Val Glu Lys Pro Ile Thr Met Ile Arg Met Glu Ser
 420 425 430

Leu His Asp
 435

<210> 115
 <211> 820
 <212> PRT
 <213> Neisseria meningitidis

<400> 115
 Met Thr Gln Lys Glu Lys His Phe Glu Glu Tyr Ala Ala Leu Ala Thr
 1 5 10 15
 Leu Pro Leu Arg Asp Val Val Val Tyr Pro His Met Val Leu Pro Leu
 20 25 30
 Phe Val Gly Arg Pro Lys Ser Ile Ala Ala Leu Glu Asn Ala Ile Thr
 35 40 45
 Arg Glu Glu Pro Val Phe Leu Leu Ala Gln Thr Asp Ala Ala Val Glu
 50 55 60
 Glu Pro Ile Ala Ala Asp Leu Tyr Gln Thr Gly Thr Val Ala Gln Val
 65 70 75 80
 Leu Gln Val Leu Lys Leu Pro Asp Gly Thr Val Lys Val Leu Val Glu
 85 90 95
 Gly Leu Tyr Arg Gly Arg Val Leu Thr Ile Glu Asp Thr Gly Gly Leu
 100 105 110
 Phe Val Ser His Ile Glu Thr Val Val Glu Glu Asp Thr Gly Gly Asn
 115 120 125
 Thr Asp Leu Glu Ala Val Arg Arg Thr Leu Leu Ala Gln Phe Glu Gln
 130 135 140
 Tyr Ala Lys Leu Asn Lys Lys Ile Pro Ala Glu Ile Ile Gly Ser Ile
 145 150 155 160
 Asn Gly Ile Ala Glu Asn Ser Arg Leu Thr Asp Thr Val Ala Ala His
 165 170 175
 Leu Gln Leu Lys Leu Ala Gln Arg Gln Gln Ile Leu Glu Ile Pro Glu
 180 185 190
 Ile Gly Lys Arg Met Glu Phe Leu Leu Ala Gln Leu Glu Ser Glu Leu
 195 200 205
 Asp Ile Met Gln Ala Glu Lys Arg Ile Arg Gly Arg Val Lys Arg Gln
 210 215 220

Met Glu Lys Ser Gln Arg Glu Tyr Tyr Leu Asn¹⁴⁹ Glu Gln Ile Lys Ala
 225 230 235 240
 Ile His Lys Glu Leu Gly Glu Glu Asp Glu Asn Gly Glu Leu Asp Ala
 245 250 255
 Leu Glu Ala Asp Ile Lys Lys Ala Gly Met Thr Lys Glu Ala Glu Glu
 260 265 270
 Lys Cys Leu Ser Glu Leu Lys Lys Leu Lys Met Met Pro Pro Met Ser
 275 280 285
 Ala Glu Ser Thr Val Val Arg Asn Tyr Ile Asp Thr Leu Leu Glu Leu
 290 295 300
 Pro Trp Lys Lys Lys Ser Arg Val Ser Lys Asp Ile Ala Lys Ala Gly
 305 310 315 320
 Leu Val Leu Asp Ala Asp His Tyr Gly Leu Glu Lys Val Lys Glu Arg
 325 330 335
 Ile Leu Glu Tyr Leu Ala Val Gln Lys Arg Met Asp Lys Leu Lys Gly
 340 345 350
 Pro Ile Leu Cys Leu Val Gly Pro Pro Gly Val Gly Lys Thr Ser Leu
 355 360 365
 Gly Glu Ser Ile Ala Lys Ala Thr Gly Arg Lys Tyr Val Arg Met Ala
 370 375 380
 Leu Gly Gly Val Arg Asp Glu Ser Glu Ile Arg Gly His Arg Arg Thr
 385 390 395 400
 Tyr Ile Gly Ser Met Pro Gly Lys Ile Leu Gln Asn Met Ala Lys Ala
 405 410 415
 Gly Val Lys Asn Pro Leu Phe Leu Leu Asp Glu Ile Asp Lys Leu Gly
 420 425 430
 Asn Asp Phe Arg Gly Asp Pro Ala Ser Ala Leu Leu Glu Val Leu Asp
 435 440 445
 Pro Glu Gln Asn Asn Lys Phe Ala Asp His Tyr Ala Glu Val Asp Tyr
 450 455 460
 Asp Leu Ser Asp Val Met Phe Ile Ala Thr Ser Asn Ser Leu Asn Ile
 465 470 475 480
 Pro Thr Pro Leu Leu Asp Arg Met Glu Ile Ile Arg Leu Ser Gly Tyr
 485 490 495
 Thr Glu Asp Glu Lys Ile Asn Ile Ala Met Gln Tyr Leu Val Pro Lys
 500 505 510
 Gln Met Lys Arg Asn Gly Val Lys Glu Gly Glu Leu Ala Ile Glu Glu
 515 520 525
 Ser Ala Val Arg Asp Ile Ile Arg Tyr Tyr Thr Arg Glu Ala Gly Val
 530 535 540
 Arg Ser Leu Asp Arg Glu Ile Ala Lys Ile Cys Arg Lys Val Val Met
 545 550 555 560
 Gln Ile Thr Leu Asp Glu Asp Lys Lys Arg Leu Ser Glu Thr Lys Lys

565 150 570 575
 Thr Ser Lys Ala Lys Pro Lys Ala Val Lys Val Asn Glu Lys Asn Leu
 580 585 590
 His Asp Tyr Leu Gly Val Arg Arg Phe Asp Tyr Gly Val Ala Glu Ser
 595 600 605
 Glu Asn Arg Ile Gly Gln Val Thr Gly Leu Ala Trp Thr Glu Val Gly
 610 615 620
 Gly Glu Leu Leu Thr Val Glu Ala Ala Ala Leu Pro Gly Lys Gly Val
 625 630 635 640
 Ile Gln Cys Thr Gly Gln Leu Gly Asp Val Met Lys Glu Ser Val Ser
 645 650 655
 Ala Ala Trp Ser Val Val Arg Ser Arg Ala Glu Ser Val Gly Leu Ala
 660 665 670
 Pro Asp Phe Tyr Glu Lys Lys Asp Ile His Ile His Val Pro Glu Gly
 675 680 685
 Ala Thr Pro Lys Asp Gly Pro Ser Ala Gly Ile Ala Met Thr Leu Ala
 690 695 700
 Ala Val Ser Ala Phe Thr Lys Ile Pro Val Arg Ala Asp Val Ala Met
 705 710 715 720
 Thr Gly Glu Ile Thr Leu Arg Gly Glu Val Leu Pro Ile Gly Gly Leu
 725 730 735
 Lys Glu Lys Leu Leu Ala Ala Leu Arg Gly Gly Ile Lys His Val Leu
 740 745 750
 Ile Pro Lys Asp Asn Val Lys Asp Leu Glu Glu Ile Pro Glu Asn Val
 755 760 765
 Lys Thr Gly Leu Thr Ile His Pro Val Lys Trp Ile Asp Glu Val Leu
 770 775 780
 Ala Leu Gly Leu Glu Ser Gln Pro Glu Pro Trp Ala Glu Pro Ser Gly
 785 790 795 800
 Ala Glu Ala Ala Ala Glu Ser Ala Ser Lys Pro Lys Pro Arg Ser Arg
 805 810 815
 Ala Thr Lys His
 820

<210> 116
 <211> 542
 <212> PRT
 <213> Neisseria meningitidis

<400> 116
 Met Ile Ser Thr Asn Gly Ile Thr Met Gln Phe Gly Ala Lys Pro Leu
 1 5 10 15
 Phe Glu Asn Val Ser Val Lys Phe Gly Glu Gly Asn Arg Tyr Gly Leu
 20 25 30
 Ile Gly Ala Asn Gly Ser Gly Lys Ser Thr Phe Met Lys Ile Leu Gly
 35 40 45

Gly Asp Leu Glu Gln Thr Ala Gly Glu Val Ala Ile Glu Asn Gly Val
 50 55 60
 Arg Leu Gly Lys Leu Arg Gln Asp Gln Phe Ala Tyr Glu Asp Met Arg
 65 70 75 80
 Val Leu Asp Val Val Met Met Gly His Thr Glu Met Trp Ala Ala Met
 85 90 95
 Thr Glu Arg Asp Ala Ile Tyr Ala Asn Pro Glu Ala Thr Glu Asp Asp
 100 105 110
 Tyr Met Lys Ala Ala Glu Leu Glu Ala Lys Phe Ala Glu Tyr Asp Gly
 115 120 125
 Tyr Thr Ala Glu Ala Arg Ala Glu Leu Leu Ser Gly Val Gly Ile
 130 135 140
 Ser Glu Asp Leu His Asn Ala Lys Met Ala Glu Val Ala Pro Gly Phe
 145 150 155 160
 Lys Leu Arg Val Leu Leu Ala Gln Ala Leu Phe Ser Lys Pro Asp Val
 165 170 175
 Leu Leu Leu Asp Glu Pro Thr Asn Asn Leu Asp Ile Asn Thr Ile Arg
 180 185 190
 Trp Leu Glu Gly Val Leu Asn Gln Tyr Asp Ser Thr Met Ile Ile Ile
 195 200 205
 Ser His Asp Arg His Phe Leu Asn Glu Val Cys Thr His Met Ala Asp
 210 215 220
 Leu Asp Tyr Asn Thr Ile Thr Ile Tyr Pro Gly Asn Tyr Asp Asp Tyr
 225 230 235 240
 Met Leu Ala Ser Ala Gln Ser Arg Glu Arg Ala Leu Lys Asp Asn Ala
 245 250 255
 Lys Ala Lys Glu Lys Leu Gln Glu Leu Gln Glu Phe Val Ala Arg Phe
 260 265 270
 Ser Ala Asn Lys Ser Lys Ala Arg Gln Ala Thr Ser Arg Leu Lys Gln
 275 280 285
 Ala Asp Lys Ile Lys Ser Glu Met Val Glu Val Lys Pro Ser Thr Arg
 290 295 300
 Gln Asn Pro Tyr Ile Arg Phe Glu Ala Asp Glu Lys Ala Lys Leu His
 305 310 315 320
 Arg Gln Ala Val Glu Val Glu Lys Leu Ala Lys Arg Phe Glu Thr Gln
 325 330 335
 Leu Phe Lys Asn Leu Asn Phe Ile Leu Glu Ala Gly Gln Arg Leu Ala
 340 345 350
 Ile Ile Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Leu Lys Leu Leu
 355 360 365
 Ala Gly Ala Tyr Asn Pro Glu Tyr Ser Asp Gly Leu Leu Pro Asp Glu
 370 375 380

Gly Thr Ile Lys Trp Ala Glu Lys Ala Ser Val Gly Tyr Tyr Pro Gln
 385 390 395 400
 Asp His Glu Asn Asp Phe Asp Val Asp Met Asp Leu Ser Glu Trp Met
 405 410 415
 Arg Gln Trp Gly Gln Glu Gly Asp Asp Glu Gln Val Ile Arg Gly Thr
 420 425 430
 Leu Gly Arg Leu Leu Phe Gly Ser Asn Asp Val Val Lys Lys Val Lys
 435 440 445
 Val Leu Ser Gly Gly Glu Lys Gly Arg Met Leu Tyr Gly Lys Leu Leu
 450 455 460
 Leu Leu Lys Pro Asn Val Leu Val Met Asp Glu Pro Thr Asn His Met
 465 470 475 480
 Asp Met Glu Ser Ile Glu Ser Leu Asn Met Ala Leu Glu Lys Tyr Asn
 485 490 495
 Gly Thr Leu Ile Phe Val Ser His Asp Arg Gln Phe Val Ser Ser Leu
 500 505 510
 Ala Thr Gln Ile Ile Glu Leu Asp Gly Lys Gly Gly Tyr Glu His Tyr
 515 520 525
 Leu Gly Asp Tyr Glu Ser Tyr Leu Glu Lys Lys Gly Val Ala
 530 535 540

<210> 117
 <211> 344
 <212> PRT
 <213> Neisseria meningitidis

<400> 117
 Met Ser Thr Ser Leu Ser Tyr Arg Asp Ala Gly Val Asp Ile Asp Ala
 1 5 10 15
 Gly Asp Gln Leu Val Glu Asn Ile Lys Pro Phe Ala Lys Arg Thr Met
 20 25 30
 Arg Pro Glu Val Leu Gly Asp Leu Gly Gly Phe Gly Ala Leu Val Glu
 35 40 45
 Ile Gly Lys Lys Tyr Gln Asn Pro Val Leu Val Ser Gly Thr Asp Gly
 50 55 60
 Val Gly Thr Lys Leu Lys Leu Ala Phe Asp Trp Asp Lys His Asp Thr
 65 70 75 80
 Val Gly Ile Asp Leu Val Ala Met Ser Val Asn Asp Ile Leu Val Gln
 85 90 95
 Gly Ala Glu Pro Leu Phe Phe Leu Asp Tyr Phe Ala Cys Gly Lys Leu
 100 105 110
 Asp Val Pro Arg Ala Thr Asp Val Ile Lys Gly Ile Ala Gln Gly Cys
 115 120 125
 Glu Glu Ser Gly Cys Ala Leu Ile Gly Gly Glu Thr Ala Glu Met Pro
 130 135 140
 Gly Met Tyr Pro Val Gly Glu Tyr Asp Leu Ala Gly Phe Ala Val Gly

145		150		153 155		160
Val Val Glu Lys	Glu 165	Asn Val Ile Thr	Gly 170	Arg Ser Ile Gly	Val 175	Gly
Asp Val Val	Leu 180	Gly Leu Ala Ser	Asn 185	Gly Ala His Ser	Asn 190	Gly Tyr
Ser Leu Ile	Arg 195	Lys Ile Ile	Glu 200	Arg Asp Asn Pro	Asp 205	Leu Asp Ala
Glu Phe Asp	Asn 210	Gly Lys Thr 215	Leu Arg Glu	Ala Val 220	Ile Ala Pro	Thr
Arg Leu Tyr	Val 225	Lys Pro 230	Ile Leu Ala Ala	Leu 235	Glu Lys Phe Thr	Ile 240
Lys Gly Met	Ala 245	His Ile Thr	Gly Gly 250	Ile Thr Glu	Asn 255	Val Pro
Arg Val Leu	Pro 260	Glu Asn Thr	Val Ala 265	Gln Ile Asp	Ala Lys 270	Ser Trp
Glu Leu Pro	Lys 275	Leu Phe Gln	Trp 280	Leu Gln Lys	Ala Gly 285	Asn Val Glu
Thr Gln Glu	Met 290	Tyr Arg Thr 295	Phe Asn Cys	Gly Ile 300	Gly Met Val	Val
Ile Val Ala	Ala 305	Glu Asp 310	Ala Asp Ala	Val Gln 315	Gly Leu Leu	Gly Glu 320
Gln Gly Glu	Thr 325	Val Tyr Arg	Leu Gly 330	Ile Arg Glu	Arg Gln 335	Gly
Asp Glu His	Gln 340	Thr Gln Val	Ala			

<210> 118
 <211> 561
 <212> PRT
 <213> Neisseria meningitidis

<400> 118
Met Ser Met Glu Asn Phe Ala Gln Leu Leu Glu Glu Ser Phe Thr Leu
1 5 10 15
Gln Glu Met Asn Pro Gly Glu Val Ile Thr Ala Glu Val Val Ala Ile
20 25 30
Asp Gln Asn Phe Val Thr Val Asn Ala Gly Leu Lys Ser Glu Ser Leu
35 40 45
Ile Asp Val Ala Glu Phe Lys Asn Ala Gln Gly Glu Ile Glu Val Lys
50 55 60
Val Gly Asp Phe Val Thr Val Thr Ile Glu Ser Val Glu Asn Gly Phe
65 70 75 80
Gly Glu Thr Lys Leu Ser Arg Glu Lys Ala Lys Arg Ala Ala Asp Trp
85 90 95
Ile Ala Leu Glu Glu Ala Met Glu Asn Gly Asp Ile Leu Ser Gly Ile
100 105 110

Ile Asn Gly Lys Val Lys Gly Gly Leu Thr Val Met Ile Ser Ser Ile
 115 120 125
 Arg Ala Phe Leu Pro Gly Ser Leu Val Asp Val Arg Pro Val Lys Asp
 130 135 140
 Thr Ser His Phe Glu Gly Lys Glu Ile Glu Phe Lys Val Ile Lys Leu
 145 150 155 160
 Asp Lys Lys Arg Asn Asn Val Val Val Ser Arg Arg Ala Val Leu Glu
 165 170 175
 Ala Thr Leu Gly Glu Glu Arg Lys Ala Leu Leu Glu Asn Leu Gln Glu
 180 185 190
 Gly Ser Val Ile Lys Gly Ile Val Lys Asn Ile Thr Asp Tyr Gly Ala
 195 200 205
 Phe Val Asp Leu Gly Gly Ile Asp Gly Leu Leu His Ile Thr Asp Leu
 210 215 220
 Ala Trp Arg Arg Val Lys His Pro Ser Glu Val Leu Glu Val Gly Gln
 225 230 235 240
 Glu Val Glu Ala Lys Val Leu Lys Phe Asp Gln Glu Lys Gln Arg Val
 245 250 255
 Ser Leu Gly Met Lys Gln Leu Gly Glu Asp Pro Trp Ser Gly Leu Thr
 260 265 270
 Arg Arg Tyr Pro Gln Gly Thr Arg Leu Phe Gly Lys Val Ser Asn Leu
 275 280 285
 Thr Asp Tyr Gly Ala Phe Val Glu Ile Glu Gln Gly Ile Glu Gly Leu
 290 295 300
 Val His Val Ser Glu Met Asp Trp Thr Asn Lys Asn Val His Pro Ser
 305 310 315 320
 Lys Val Val Gln Leu Gly Asp Glu Val Glu Val Met Ile Leu Glu Ile
 325 330 335
 Asp Glu Gly Arg Arg Arg Ile Ser Leu Gly Met Lys Gln Cys Gln Ala
 340 345 350
 Asn Pro Trp Glu Glu Phe Ala Ala Asn His Asn Lys Gly Asp Lys Ile
 355 360 365
 Ser Gly Ala Val Lys Ser Ile Thr Asp Phe Gly Val Phe Val Gly Leu
 370 375 380
 Pro Gly Gly Ile Asp Gly Leu Val His Leu Ser Asp Leu Ser Trp Thr
 385 390 395 400
 Glu Ser Gly Glu Glu Ala Val Arg Lys Tyr Lys Lys Gly Glu Glu Val
 405 410 415
 Glu Ala Val Val Leu Ala Ile Asp Val Glu Lys Glu Arg Ile Ser Leu
 420 425 430
 Gly Ile Lys Gln Leu Glu Gly Asp Pro Phe Gly Asn Phe Ile Ser Val
 435 440 445

Asn Asp Lys Gly Ser Leu Val Lys Gly Ser Val Lys Ser Val Asp Ala
 450 455 460 155
 Lys Gly Ala Val Ile Ala Leu Ser Asp Glu Val Glu Gly Tyr Leu Pro
 465 470 475
 Ala Ser Glu Phe Ala Ala Asp Arg Val Glu Asp Leu Thr Thr Lys Leu
 485 490 495
 Lys Glu Gly Asp Glu Val Glu Ala Val Ile Val Thr Val Asp Arg Lys
 500 505 510
 Asn Arg Ser Ile Lys Leu Ser Val Lys Ala Lys Asp Ala Lys Glu Ser
 515 520 525
 Arg Glu Ala Leu Asn Ser Val Asn Ala Ala Ala Asn Ala Asn Ala Gly
 530 535 540
 Thr Thr Ser Leu Gly Asp Leu Leu Lys Ala Lys Leu Ser Gly Glu Gln
 545 550 555 560
 Glu

<210> 119
 <211> 104
 <212> PRT
 <213> Neisseria meningitidis

<400> 119
 Met Thr Lys Ser Glu Leu Met Val Arg Leu Ala Glu Val Phe Ala Ala
 1 5 10 15
 Lys Asn Gly Thr His Leu Leu Ala Lys Asp Val Glu Tyr Ser Val Lys
 20 25 30
 Val Leu Val Asp Thr Met Thr Arg Ser Leu Ala Arg Gly Gln Arg Ile
 35 40 45
 Glu Ile Arg Gly Phe Gly Ser Phe Asp Leu Asn His Arg Pro Ala Arg
 50 55 60
 Ile Gly Arg Asn Pro Lys Thr Gly Glu Arg Val Glu Val Pro Glu Lys
 65 70 75 80
 His Val Pro His Phe Lys Pro Gly Lys Glu Leu Arg Glu Arg Val Asp
 85 90 95
 Leu Ala Leu Lys Glu Asn Ala Asn
 100

<210> 120
 <211> 437
 <212> PRT
 <213> Neisseria meningitidis

<400> 120
 Met Met Ser Val Thr Val Glu Thr Leu Glu Asn Leu Glu Arg Lys Val
 1 5 10 15
 Val Leu Ser Leu Pro Trp Ser Glu Ile Asn Ala Glu Thr Asp Lys Lys
 20 25 30
 Leu Lys Gln Thr Gln Arg Arg Ala Lys Ile Asp Gly Phe Arg Pro Gly

35					40					156					45				
Lys	Ala	Pro	Leu	Lys	Met	Ile	Ala	Gln	Met	Tyr	Gly	Ala	Ser	Ala	Gln				
50						55					60								
Asn	Asp	Val	Ile	Asn	Glu	Leu	Val	Gln	Arg	Arg	Phe	Tyr	Asp	Val	Ala				
65					70					75					80				
Val	Ala	Gln	Glu	Leu	Lys	Val	Ala	Gly	Phe	Pro	Arg	Phe	Glu	Gly	Val				
				85					90					95					
Glu	Glu	Gln	Asp	Asp	Lys	Glu	Ser	Phe	Lys	Val	Ala	Ala	Ile	Phe	Glu				
			100					105					110						
Val	Phe	Pro	Glu	Val	Val	Ile	Gly	Asp	Leu	Ser	Ala	Gln	Glu	Val	Glu				
		115					120					125							
Lys	Val	Thr	Ala	Ser	Val	Gly	Asp	Ala	Glu	Val	Asp	Gln	Thr	Val	Glu				
	130					135					140								
Ile	Leu	Arg	Lys	Gln	Arg	Thr	Arg	Phe	Asn	His	Val	Glu	Arg	Glu	Ala				
145						150				155					160				
Arg	Asn	Gly	Asp	Arg	Val	Ile	Ile	Asp	Phe	Glu	Gly	Lys	Ile	Asp	Gly				
				165					170					175					
Glu	Pro	Phe	Ala	Gly	Gly	Ala	Ser	Lys	Asn	Tyr	Ala	Phe	Val	Leu	Gly				
			180					185					190						
Ala	Ser	Gln	Met	Leu	Pro	Glu	Phe	Glu	Ala	Gly	Val	Val	Gly	Met	Lys				
		195					200					205							
Ala	Gly	Glu	Ser	Lys	Asp	Val	Thr	Val	Asn	Phe	Pro	Glu	Asp	Tyr	His				
	210					215					220								
Gly	Lys	Asp	Val	Ala	Gly	Lys	Thr	Ala	Val	Phe	Thr	Ile	Thr	Leu	Asn				
225					230					235					240				
Asn	Val	Ser	Glu	Ala	Thr	Leu	Pro	Glu	Val	Asp	Ala	Asp	Phe	Ala	Lys				
				245					250					255					
Ala	Leu	Gly	Ile	Ala	Asp	Gly	Asp	Val	Ala	Lys	Met	Arg	Glu	Glu	Val				
			260					265					270						
Gln	Lys	Asn	Val	Ser	Arg	Glu	Val	Glu	Arg	Arg	Val	Asn	Glu	Gln	Thr				
		275					280					285							
Lys	Glu	Ser	Val	Met	Asn	Ala	Leu	Leu	Lys	Ala	Val	Glu	Leu	Lys	Ala				
	290					295					300								
Pro	Val	Ala	Leu	Val	Asn	Glu	Glu	Ala	Ala	Arg	Leu	Ala	Asn	Glu	Met				
305						310					315				320				
Lys	Gln	Asn	Phe	Val	Asn	Gln	Gly	Met	Ala	Asp	Ala	Ala	Asn	Leu	Asp				
				325					330					335					
Leu	Pro	Leu	Asp	Met	Phe	Lys	Glu	Gln	Ala	Glu	Arg	Arg	Val	Ser	Leu				
			340					345					350						
Gly	Leu	Ile	Leu	Ala	Lys	Leu	Val	Asp	Glu	Asn	Lys	Leu	Glu	Pro	Thr				
		355					360					365							
Glu	Glu	Gln	Ile	Lys	Ala	Val	Val	Ala	Asn	Phe	Ala	Glu	Ser	Tyr	Glu				
	370					375					380								

Asp Pro Gln Glu Val Ile Asp Trp Tyr Tyr Ala Asp Pro Ser Arg Leu
385 390 395 400

Gln Ala Pro Thr Ser Leu Ala Val Glu Ser Asn Val Val Asp Phe Val
405 410 415

Leu Gly Lys Ala Lys Val Asn Glu Lys Ala Leu Ser Phe Asp Glu Val
420 425 430

Met Gly Ala Gln Ala
435

<210> 121

<211> 150

<212> PRT

<213> Neisseria meningitidis

<400> 121

Met Gln Ile Ile Leu Leu Glu Lys Ile Gly Gly Leu Gly Asn Leu Gly
1 5 10 15

Asp Ile Val Thr Val Lys Asn Gly Tyr Ala Arg Asn Phe Leu Ile Pro
20 25 30

Ala Gly Lys Ala Lys Arg Ala Thr Glu Ala Asn Met Lys Glu Phe Glu
35 40 45

Ala Arg Arg Ala Glu Leu Glu Ala Lys Gln Ala Glu Ile Leu Ala Asp
50 55 60

Ala Arg Val Arg Gln Glu Lys Leu Asp Gly Gln Thr Val Thr Val Ala
65 70 75 80

Gln Lys Ala Gly Val Asp Gly Arg Leu Phe Gly Ser Val Thr Asn Ala
85 90 95

Asp Ile Ala Ala Ala Ile Val Ala Ala Gly Ile Glu Ala Val Lys Ala
100 105 110

Asn Val Arg Leu Pro Asn Gly Pro Leu Lys Ala Val Gly Glu Tyr Glu
115 120 125

Val Glu Val Ala Leu His Thr Asp Ala Val Ala Lys Ile Thr Val Ala
130 135 140

Val Val Ala Ala Thr Glu
145 150

<210> 122

<211> 122

<212> PRT

<213> Neisseria meningitidis

<400> 122

Met Arg His Tyr Glu Ile Val Phe Ile Val His Pro Asp Gln Ser Glu
1 5 10 15

Gln Val Pro Ala Met Val Glu Arg Tyr Lys Thr Met Ile Ala Glu Ala
20 25 30

Asn Gly Lys Ile His Arg Leu Glu Asp Trp Gly Arg Arg Gln Leu Ala
35 40 45

Tyr Pro Ile Asn Lys Ile His Lys Ala His Tyr Val Leu Met Asn Ile
 50 55 60
 Glu Thr Thr Pro Glu Val Val Glu Glu Leu Glu Thr Ala Phe Arg Phe
 65 70 75 80
 Asn Asp Ala Ile Leu Arg His Leu Thr Ile Lys Thr Lys His Ala Val
 85 90 95
 Thr Glu Ala Ser Pro Met Leu Gly Gly Glu Lys Ala Lys Asn Leu Leu
 100 105 110
 Ser Gly Ala Ser Glu Glu Ala Val Ala Gln
 115 120

<210> 123
 <211> 316
 <212> PRT
 <213> Neisseria meningitidis

<400> 123
 Met Ser Gln His Arg Lys Leu Ile Ile Leu Gly Ser Gly Pro Ala Gly
 1 5 10 15
 Tyr Thr Ala Ala Val Tyr Ala Ala Arg Ala Asn Leu Asn Pro Val Ile
 20 25 30
 Ile Thr Gly Ile Ala Gln Gly Gly Gln Leu Met Thr Thr Thr Glu Val
 35 40 45
 Asp Asn Trp Pro Ala Asp Ala Asp Gly Val Gln Gly Pro Glu Leu Met
 50 55 60
 Ala Arg Phe Leu Ala His Ala Glu Arg Phe Gly Thr Glu Ile Ile Phe
 65 70 75 80
 Asp Gln Ile Asn Ala Val Asp Leu Gln Lys Arg Pro Phe Thr Leu Lys
 85 90 95
 Gly Asp Met Gly Glu Tyr Thr Cys Asp Ala Leu Ile Val Ala Thr Gly
 100 105 110
 Ala Ser Ala Lys Tyr Leu Gly Leu Pro Ser Glu Glu Ala Phe Ala Gly
 115 120 125
 Lys Gly Val Ser Ala Cys Ala Thr Cys Asp Gly Phe Phe Tyr Lys Asn
 130 135 140
 Gln Asp Val Ala Val Val Gly Gly Gly Asn Thr Ala Val Glu Glu Ala
 145 150 155 160
 Leu Tyr Leu Ala Asn Ile Ala Lys Thr Val Thr Leu Ile His Arg Arg
 165 170 175
 Ser Glu Phe Arg Ala Glu Lys Ile Met Ile Asp Lys Leu Met Lys Arg
 180 185 190
 Val Glu Glu Gly Lys Ile Ile Leu Lys Leu Glu Ser Asn Leu Gln Glu
 195 200 205
 Val Leu Gly Asp Asp Arg Gly Val Asn Gly Ala Leu Leu Lys Asn Asn
 210 215 220
 Asp Gly Ser Glu Gln Gln Ile Ala Val Ser Gly Ile Phe Ile Ala Ile

225	230								159 235								240	
Gly	His	Lys	Pro	Asn 245	Thr	Asp	Ile	Phe	Lys 250	Gly	Gln	Leu	Glu	Met 255	Asp			
Glu	Ala	Gly	Tyr 260	Leu	Lys	Thr	Lys	Gly 265	Gly	Thr	Ala	Asp	Asn 270	Val	Gly			
Ala	Thr	Asn 275	Ile	Glu	Gly	Val	Trp 280	Ala	Ala	Gly	Asp	Val 285	Lys	Asp	His			
Thr	Tyr 290	Arg	Gln	Ala	Ile	Thr 295	Ser	Ala	Ala	Ser	Gly 300	Cys	Gln	Ala	Ala			
Leu 305	Asp	Ala	Glu	Arg	Trp 310	Leu	Gly	Ser	Gln	Asn 315	Ile							
<210>	124																	
<211>	238																	
<212>	PRT																	
<213>	Neisseria meningitidis																	
<400>	124																	
Met 1	Thr	Asp	Thr	Ala 5	Glu	Asn	Gln	Thr	Gln 10	Asn	Asn	Trp	Gln	Ala 15	Gly			
His	Pro	Arg	Ser 20	Ile	Arg	Ser	Phe	Val 25	Leu	Arg	Gln	Ser	His 30	Met	Thr			
Ala	Ala	Gln 35	Gln	Arg	Ala	Ile	Asp 40	Thr	Leu	Trp	Asp	Ser 45	Phe	Gly	Ile			
Asp	Tyr 50	Gln	Ala	Thr	Pro	Ala 55	Asp	Leu	Asp	Ala	Arg 60	Phe	Gly	Ser	Ser			
Arg 65	Pro	Lys	Ile	Leu	Glu 70	Ile	Gly	Phe	Gly	Met 75	Gly	Thr	Ala	Thr	Ala 80			
Glu	Ile	Ala	Arg	Arg 85	Leu	Pro	Glu	Thr	Asp 90	Phe	Leu	Ala	Ile	Asp 95	Val			
His	Gly	Pro	Gly 100	Val	Gly	Asn	Leu	Leu 105	Lys	Leu	Ile	Asp	Glu 110	Asn	His			
Leu	Glu	Asn 115	Ile	Arg	Val	Met	Arg 120	His	Asp	Ala	Val	Glu 125	Val	Val	Glu			
Asn	Met 130	Leu	Gln	Asp	Gly	Ser 135	Leu	Asp	Gly	Ile	His 140	Ile	Phe	Phe	Pro			
Asp 145	Pro	Trp	His	Lys	Lys 150	Arg	His	His	Lys	Arg 155	Arg	Leu	Ile	Gln	Ala 160			
Pro	Phe	Ile	Ala	Lys 165	Leu	Leu	Pro	Lys	Leu 170	Lys	Thr	Gly	Gly	Tyr 175	Ile			
His	Leu	Ala	Thr 180	Asp	Trp	Glu	Glu	Tyr 185	Ala	Gln	Gln	Met	Leu 190	Glu	Val			
Leu	Ser	Ser 195	Phe	Asp	Ser	Leu	Gln 200	Asn	Thr	Ala	Ala	Asp 205	Tyr	Ala	Pro			
Thr	Pro 210	Asp	Tyr	Arg	Pro	Glu 215	Thr	Lys	Phe	Glu	Ala 220	Arg	Gly	Lys	Arg			

Leu Gly His Gly Val Trp Asp Leu Val Phe Lys Arg Ile Gly
 225 230 235

<210> 125
 <211> 570
 <212> PRT
 <213> Neisseria meningitidis

<400> 125
 Met Lys Ala Ser Gln Phe Phe Ile Ser Thr Leu Lys Glu Ala Pro Ala
 1 5 10 15

Glu Ala Ala Leu Ala Ser His Lys Leu Met Ile Arg Ala Gly Leu Ile
 20 25 30

Lys Ala Asn Ala Ser Gly Leu Tyr Thr Trp Met Pro Met Gly Leu Arg
 35 40 45

Val Leu Arg Lys Val Glu Asn Val Val Arg Glu Glu Met Ala Arg Ala
 50 55 60

Gly Ser Val Glu Leu Leu Met Pro Val Val Gln Pro Ala Glu Leu Trp
 65 70 75 80

Gln Glu Ser Gly Arg Trp Glu Phe Tyr Gly Lys Glu Leu Leu Arg Leu
 85 90 95

Lys Asp Arg His Asp Arg Asp Phe Cys Met Gly Pro Thr Cys Glu Glu
 100 105 110

Val Ile Ala Asp Ile Val Arg Lys Glu Ile Asn Ser Tyr Lys Gln Leu
 115 120 125

Pro Lys Asn Phe Tyr His Ile Gln Thr Lys Phe Arg Asp Glu Val Arg
 130 135 140

Pro Arg Phe Gly Val Met Arg Ala Arg Glu Phe Val Met Lys Asp Ala
 145 150 155 160

Tyr Ser Phe His Ala Asp Tyr Ala Ser Leu Gln Thr Thr Tyr Gln Asp
 165 170 175

Met Tyr Asp Ala Tyr Cys Arg Ile Phe Thr Arg Leu Gly Leu Ala Phe
 180 185 190

Arg Pro Val Ala Ala Asp Thr Gly Ser Ile Gly Gly Thr Gly Ser His
 195 200 205

Glu Phe Gln Val Leu Ala Glu Ser Gly Glu Asp Val Ile Ala Tyr Ser
 210 215 220

Asp Thr Ser Asp Tyr Ala Ala Asn Ile Glu Leu Ala Pro Thr Leu Pro
 225 230 235 240

Leu Lys Gly Glu Arg Ala Ala Ala Gln Ala Glu Leu Val Lys Val His
 245 250 255

Thr Pro Asn Val Lys Thr Ile Asp Ser Leu Val Asp Phe Leu Ser Ile
 260 265 270

Pro Ile Glu Lys Thr Leu Lys Ser Ile Val Val Glu Gly Glu Asn Glu
 275 280 285

Gly Glu Leu Ile Leu Leu Leu Leu Arg Gly Asp¹⁶¹ His Glu Phe Asn Asp
 290 295 300
 Ile Lys Ala Glu Lys Leu Ala Gly Val Lys Ser Pro Leu Thr Met Ala
 305 310 315 320
 Ser Pro Ala Ala Ile Val Glu Gln Phe Gly Ala Asn Gly Gly Ser Leu
 325 330 335
 Gly Pro Val Gly Phe Ala Gly Lys Val Tyr Ala Asp Phe Ala Thr Glu
 340 345 350
 Lys Gly Ala Asp Trp Val Ile Gly Ala Asn Glu Asp Asp Tyr His Tyr
 355 360 365
 Thr Gly Phe Asn Phe Gly Arg Asp Ala Ala Glu Pro Glu Phe Val Asp
 370 375 380
 Leu Arg Asn Val Val Glu Gly Asp Glu Ser Pro Asp Gly Gln Gly Arg
 385 390 395 400
 Leu Lys Leu Ala Arg Gly Ile Glu Val Gly His Val Phe Gln Leu Arg
 405 410 415
 Asp Lys Tyr Thr Gln Ala Met Asn Val Ser Phe Leu Asp Asn Asn Gly
 420 425 430
 Lys Ser Gln Ile Met Glu Met Gly Cys Tyr Gly Ile Gly Ile Thr Arg
 435 440 445
 Val Val Ala Ala Ala Ile Glu Gln Asn Asn Asp Glu Lys Gly Ile Ile
 450 455 460
 Trp Thr Lys Ala Met Ala Pro Phe Glu Val Val Ile Val Pro Met Asn
 465 470 475 480
 Tyr Lys Lys Ser Asp Thr Val Arg Glu Ala Ala Asp Lys Ile Tyr Ala
 485 490 495
 Glu Leu Leu Ala Ala Gly Ala Asp Val Leu Leu Asp Asp Arg Asp Glu
 500 505 510
 Arg Ala Gly Val Leu Leu Asn Asp Ser Glu Leu Leu Gly Ile Pro His
 515 520 525
 Arg Ile Val Ile Gly Asp Arg Ala Leu Lys Glu Gly Asn Val Glu Tyr
 530 535 540
 Ala Glu Arg Arg Asp Asn Glu Ala Gln Ala Val Ala Ile Gly Glu Ile
 545 550 555 560
 Val Ala Arg Val Thr Ala Ser Leu Asn Ala
 565 570

<210> 126
 <211> 887
 <212> PRT
 <213> Neisseria meningitidis

<400> 126
 Met Ser Thr Gln Leu His Asp Val Asp Pro Ile Glu Thr Gln Glu Trp
 1 5 10 15
 Leu Asp Ala Leu Ser Ser Val Leu Glu Tyr Glu Gly Gly Glu Arg Ala

162																
20							25			30			35			
Gln	Tyr	Leu	Leu	Glu	Asn	Leu	Val	Lys	Tyr	Cys	Arg	Asp	Lys	Gly	Val	
		35					40					45				
Arg	Met	Pro	His	Gly	Thr	Thr	Thr	Pro	Tyr	Leu	Asn	Thr	Val	Ser	Val	
	50					55					60					
Glu	Asn	Glu	Lys	Gly	Ile	Pro	Gly	Asp	Gln	Asn	Ile	Glu	His	Arg	Ile	
65					70					75					80	
Arg	Ala	Phe	Val	Arg	Trp	Asn	Ala	Ala	Ala	Ile	Val	Leu	Arg	Ala	Gly	
				85					90					95		
Lys	Lys	Asp	Leu	Glu	Leu	Gly	Gly	His	Ile	Ala	Ser	Phe	Gln	Ser	Ala	
			100					105					110			
Ala	Thr	Met	Tyr	Glu	Val	Gly	Phe	Asn	His	Phe	Trp	Lys	Ala	Lys	Gly	
		115					120					125				
Glu	Gly	Glu	Glu	Gly	Asp	Leu	Val	Phe	Phe	Gln	Gly	His	Val	Ala	Pro	
	130					135					140					
Gly	Ile	Tyr	Ala	Arg	Ala	Phe	Val	Glu	Gly	Arg	Leu	Thr	Glu	Asp	Gln	
145					150					155					160	
Leu	Asn	Asn	Phe	Arg	Gln	Glu	Val	Asp	Gly	His	Gly	Leu	Pro	Ser	Tyr	
				165					170					175		
Pro	His	Pro	His	Leu	Leu	Pro	Asp	Phe	Trp	Gln	Phe	Pro	Thr	Val	Ser	
			180					185					190			
Met	Gly	Leu	Gly	Pro	Ile	Met	Ala	Ile	Tyr	Gln	Ala	Arg	Phe	Leu	Lys	
		195					200					205				
Tyr	Leu	Glu	Ser	Arg	Gly	Leu	Ala	Lys	Thr	Lys	Gly	Arg	Lys	Val	Trp	
	210					215					220					
Cys	Phe	Cys	Gly	Asp	Gly	Glu	Met	Asp	Glu	Pro	Glu	Ser	Gln	Gly	Ala	
225					230					235					240	
Ile	Ala	Leu	Ala	Ala	Arg	Glu	Gly	Leu	Asp	Asn	Leu	Ile	Phe	Val	Ile	
				245					250					255		
Asn	Cys	Asn	Leu	Gln	Arg	Leu	Asp	Gly	Pro	Val	Arg	Gly	Asn	Gly	Lys	
			260					265					270			
Ile	Ile	Gln	Glu	Leu	Glu	Gly	Asn	Phe	Ala	Gly	Ala	Gly	Trp	Asn	Val	
		275					280					285				
Val	Lys	Val	Ile	Trp	Gly	Arg	Arg	Trp	Asp	Arg	Leu	Leu	Ala	Lys	Asp	
	290					295					300					
Lys	Asp	Gly	Ile	Leu	Arg	Gln	Arg	Met	Glu	Glu	Cys	Leu	Asp	Gly	Asp	
305					310					315					320	
Tyr	Gln	Thr	Tyr	Lys	Ser	Lys	Asp	Gly	Ala	Tyr	Val	Arg	Glu	His	Phe	
				325					330					335		
Phe	Asn	Thr	Pro	Glu	Leu	Lys	Ala	Leu	Val	Ala	Asp	Met	Thr	Asp	Glu	
			340					345					350			
Gln	Leu	Trp	Ala	Leu	Asn	Arg	Gly	Gly	His	Asp	Pro	Gln	Lys	Val	Tyr	
		355					360					365				

Asn Ala Tyr Asp Arg Ala Ala Asn His Ala Asp Gly Lys Pro Thr Val
 370 375 380
 Ile Leu Ala Lys Thr Ile Lys Gly Tyr Gly Met Gly Ala Ser Gly Glu
 385 390 395 400
 Gly Gln Asn Val Ala His Gln Ala Lys Lys Met Asp Lys Ala Ser Leu
 405 410 415
 Lys Gln Phe Arg Asp Arg Phe Asp Ile Pro Val Thr Asp Glu Gln Ile
 420 425 430
 Glu Ser Gly Asp Leu Pro Tyr Leu Thr Phe Ala Pro Asp Thr Glu Glu
 435 440 445
 Tyr Lys Tyr Leu His Ala Arg Arg Asp Ala Leu Gly Gly Tyr Leu Pro
 450 455 460
 Gln Arg Lys Pro Thr Gln Glu Val Leu Glu Val Pro Glu Leu Ser Ala
 465 470 475 480
 Phe Asp Ala Gln Leu Lys Ser Ser Gly Glu Arg Glu Phe Ser Thr Thr
 485 490 495
 Met Ala Phe Val Arg Ile Leu Ser Thr Leu Leu Lys Asp Lys Lys Ile
 500 505 510
 Gly Lys Arg Val Val Pro Ile Val Pro Asp Glu Ser Arg Thr Phe Gly
 515 520 525
 Met Glu Gly Met Phe Arg Gln Tyr Gly Ile Trp Asn Pro Lys Gly Gln
 530 535 540
 Gln Tyr Thr Pro Gln Asp Lys Asp Gln Leu Met Phe Tyr Lys Glu Ser
 545 550 555 560
 Val Asp Gly Gln Ile Leu Gln Glu Gly Ile Asn Glu Pro Gly Ala Met
 565 570 575
 Ala Asp Trp Ile Ala Ala Ala Thr Ser Tyr Ala Asn Ser Asn Phe Ala
 580 585 590
 Met Ile Pro Phe Tyr Ile Tyr Tyr Ser Met Phe Gly Phe Gln Arg Ile
 595 600 605
 Gly Asp Leu Ala Trp Ala Ala Gly Asp Met His Ala Arg Gly Phe Leu
 610 615 620
 Leu Gly Gly Thr Ala Gly Arg Thr Thr Leu Asn Gly Glu Gly Leu Gln
 625 630 635 640
 His Glu Asp Gly His Ser His Ile Gln Ala Asp Leu Ile Pro Asn Cys
 645 650 655
 Val Ser Tyr Asp Pro Thr Phe Gln Tyr Glu Val Ala Val Ile Val Gln
 660 665 670
 Asp Gly Leu Arg Arg Met Tyr Ala Asn Asn Glu Asp Val Phe Tyr Tyr
 675 680 685
 Ile Thr Leu Met Asn Glu Asn Tyr Thr His Pro Asp Met Pro Glu Gly
 690 695 700

Ala Glu Gln Asp Ile Leu Lys Gly Met Tyr Leu Leu Lys Ala Gly Gly
 705 710 715 720
 Lys Gly Asp Lys Lys Val Gln Leu Met Gly Ser Gly Thr Ile Leu Gln
 725 730 735
 Glu Val Ile Ala Gly Ala Glu Leu Leu Lys Ala Asp Phe Gly Val Glu
 740 745 750
 Ala Asp Ile Trp Ser Cys Pro Ser Phe Asn Leu Leu His Arg Asp Ala
 755 760 765
 Val Glu Val Glu Arg Phe Asn Arg Leu His Pro Leu Glu Ala Glu Lys
 770 775 780
 Val Pro Phe Val Thr Ser Gln Leu Gln Gly His Asp Gly Pro Val Ile
 785 790 795 800
 Ala Ala Thr Asp Tyr Ile Arg Ser Tyr Ala Asp Arg Ile Arg Ala Tyr
 805 810 815
 Ile Pro Asn Asp Tyr His Val Leu Gly Thr Asp Gly Phe Gly Arg Ser
 820 825 830
 Asp Ser Arg Ala Asn Leu Arg Arg Phe Phe Glu Val Asp Arg Tyr Asn
 835 840 845
 Val Ala Val Ala Ala Leu Ala Ala Leu Ala Glu Gln Gly Lys Val Ser
 850 855 860
 Lys Glu Thr Val Gln Gln Ala Ile Glu Lys Tyr Gly Ile Lys Ala Asp
 865 870 875 880
 Ser Ala Pro Ser Trp Lys Arg
 885

<210> 127
 <211> 535
 <212> PRT
 <213> Neisseria meningitidis

<400> 127
 Met Ser Ile Val Glu Ile Lys Val Pro Asp Ile Gly Gly His Glu Asn
 1 5 10 15
 Val Asp Ile Ile Ala Val Glu Val Lys Ala Gly Asp Thr Ile Ala Val
 20 25 30
 Asp Asp Thr Leu Ile Thr Leu Glu Thr Asp Lys Ala Thr Met Asp Val
 35 40 45
 Pro Ala Asp Ala Ala Gly Val Val Lys Glu Val Lys Val Lys Val Gly
 50 55 60
 Asp Lys Ile Ser Glu Gly Gly Val Ile Leu Thr Val Glu Thr Gly Ala
 65 70 75 80
 Ala Ala Ala Glu Ala Ala Pro Ala Ala Ala Glu Ala Gln Pro Ala Pro
 85 90 95
 Ala Ala Ala Pro Ala Ala Ala Gly Gly Ala Thr Val Gln Val Ala Val
 100 105 110
 Pro Asp Ile Gly Gly His Thr Asp Val Asp Val Ile Ala Val Glu Ile

115					120					165					125				
Lys	Val	Gly	Asp	Thr	Val	Ala	Glu	Asp	Asp	Thr	Leu	Ile	Thr	Leu	Glu				
130						135					140								
Thr	Asp	Lys	Ala	Thr	Met	Asp	Val	Pro	Cys	Thr	Ala	Ala	Gly	Val	Val				
145					150					155					160				
Lys	Ala	Val	Phe	Leu	Lys	Val	Gly	Asp	Lys	Val	Ser	Glu	Gly	Ser	Ala				
				165					170					175					
Ile	Ile	Glu	Val	Glu	Thr	Val	Gly	Ser	Ala	Ala	Ala	Ala	Pro	Ala	Gln				
			180					185					190						
Ala	Ala	Gln	Ala	Ala	Ala	Pro	Ala	Ala	Ala	Pro	Pro	Pro	Thr	Ala	Ala				
		195					200					205							
Ala	Ala	Pro	Ala	Ala	Ala	Pro	Ala	Pro	Ser	Ala	Pro	Ala	Ala	Ala	Lys				
		210				215					220								
Ile	Asp	Glu	Ala	Ala	Phe	Ala	Lys	Ala	His	Ala	Gly	Pro	Ser	Ala	Arg				
225					230					235					240				
Lys	Leu	Ala	Arg	Glu	Leu	Gly	Val	Asp	Leu	Gly	Gln	Val	Lys	Gly	Thr				
				245					250					255					
Gly	Leu	Lys	Gly	Arg	Ile	Met	Gly	Asp	Asp	Ile	Lys	Ala	Phe	Val	Lys				
			260					265					270						
Ser	Val	Met	Gln	Gly	Gly	Ala	Ala	Lys	Pro	Ala	Ala	Ala	Ser	Ala	Ser				
		275					280					285							
Leu	Gly	Gly	Gly	Leu	Asp	Leu	Leu	Pro	Trp	Pro	Lys	Val	Asp	Phe	Ser				
	290					295					300								
Lys	Phe	Gly	Asn	Val	Glu	Val	Lys	Glu	Leu	Ser	Arg	Ile	Lys	Lys	Ile				
305					310					315					320				
Ser	Gly	Gln	Asn	Leu	Ser	Arg	Asn	Trp	Val	Val	Ile	Pro	His	Val	Thr				
			325						330					335					
Val	His	Glu	Glu	Ala	Asp	Met	Thr	Glu	Leu	Glu	Glu	Phe	Arg	Lys	Gln				
			340					345					350						
Leu	Asn	Lys	Glu	Trp	Glu	Arg	Glu	Gly	Val	Lys	Leu	Ser	Pro	Leu	Ala				
		355					360					365							
Phe	Ile	Ile	Lys	Ala	Ser	Val	Ser	Ala	Leu	Lys	Ala	Phe	Pro	Glu	Phe				
	370					375					380								
Asn	Ala	Ser	Leu	Asp	Gly	Asp	Asn	Leu	Val	Leu	Lys	Asn	Tyr	Phe	Asn				
385					390					395					400				
Ile	Gly	Phe	Ala	Ala	Asp	Thr	Pro	Asn	Gly	Leu	Val	Val	Pro	Val	Ile				
				405					410					415					
Lys	Asp	Val	Asp	Gln	Lys	Gly	Leu	Lys	Gln	Ile	Ser	Gln	Glu	Leu	Thr				
			420					425					430						
Glu	Leu	Ser	Lys	Lys	Ala	Arg	Glu	Gly	Lys	Leu	Lys	Pro	Gln	Glu	Met				
		435					440					445							
Gln	Gly	Ala	Cys	Phe	Thr	Ile	Ser	Ser	Leu	Gly	Gly	Ile	Gly	Gly	Thr				
	450					455					460								

Gly Phe Thr Pro Ile Val Asn Ala Pro Glu Val Ala Ile Leu Gly Val
465 470 475 480

Cys Lys Ser Gln Ile Lys Pro Val Trp Asn Gly Lys Glu Phe Ala Pro
485 490 495

Arg Leu Met Cys Pro Leu Ser Leu Ser Phe Asp His Arg Val Ile Asp
500 505 510

Gly Ala Ala Gly Met Arg Phe Thr Val Phe Leu Ala Lys Leu Leu Lys
515 520 525

Asp Phe Arg Arg Ile Thr Leu
530 535

<210> 128

<211> 145

<212> PRT

<213> Neisseria meningitidis

<400> 128

Met Gly Asn Phe Leu Tyr Arg Gly Ile Ser Cys Gln Gln Asp Glu Gln
1 5 10 15

Asn Asn Gly Gln Leu Lys Pro Lys Gly Asn Lys Ala Glu Val Ala Ile
20 25 30

Arg Tyr Asp Gly Lys Phe Lys Tyr Asp Gly Lys Ala Thr His Gly Pro
35 40 45

Ser Val Lys Asn Ala Val Tyr Ala His Gln Ile Glu Thr Gly Leu Tyr
50 55 60

Asp Gly Cys Tyr Ile Ser Thr Thr Thr Asp Lys Glu Ile Ala Lys Lys
65 70 75 80

Phe Ala Thr Ser Ser Gly Ile Glu Asn Gly Tyr Ile Tyr Val Leu Asn
85 90 95

Arg Asp Leu Phe Gly Gln Tyr Ser Ile Phe Glu Tyr Glu Val Glu His
100 105 110

Pro Glu Asn Pro Asn Glu Lys Glu Val Thr Ile Arg Ala Glu Asp Cys
115 120 125

Gly Cys Ile Pro Glu Glu Val Ile Ile Ala Lys Glu Leu Ile Glu Ile
130 135 140

Asn
145

<210> 129

<211> 594

<212> PRT

<213> Neisseria meningitidis

<400> 129

Met Ala Leu Val Glu Leu Lys Val Pro Asp Ile Gly Gly His Glu Asn
1 5 10 15

Val Asp Ile Ile Ala Val Glu Val Asn Val Gly Asp Thr Ile Ala Val
20 25 30

Asp	Asp	Thr	Leu	Ile	Thr	Leu	Glu	Thr	Asp	Lys	Ala	Thr	Met	Asp	Val
		35					40				167	45			
Pro	Ala	Glu	Val	Ala	Gly	Val	Val	Lys	Glu	Val	Lys	Val	Lys	Val	Gly
	50				55						60				
Asp	Lys	Ile	Ser	Glu	Gly	Gly	Leu	Ile	Val	Val	Val	Glu	Ala	Glu	Gly
65					70					75					80
Thr	Ala	Ala	Ala	Pro	Lys	Ala	Glu	Ala	Ala	Ala	Ala	Pro	Ala	Gln	Glu
				85					90					95	
Ala	Pro	Lys	Ala	Ala	Ala	Pro	Ala	Pro	Gln	Ala	Ala	Gln	Phe	Gly	Gly
			100					105					110		
Ser	Ala	Asp	Ala	Glu	Tyr	Asp	Val	Val	Val	Leu	Gly	Gly	Gly	Pro	Gly
		115					120					125			
Gly	Tyr	Ser	Ala	Ala	Phe	Ala	Ala	Ala	Asp	Glu	Gly	Leu	Lys	Val	Ala
	130					135					140				
Ile	Val	Glu	Arg	Tyr	Lys	Thr	Leu	Gly	Gly	Val	Cys	Leu	Asn	Val	Gly
145					150					155					160
Cys	Ile	Pro	Ser	Lys	Ala	Leu	Leu	His	Asn	Ala	Ala	Val	Ile	Asp	Glu
				165					170					175	
Val	Arg	His	Leu	Ala	Ala	Asn	Gly	Ile	Lys	Tyr	Pro	Glu	Pro	Glu	Leu
			180					185					190		
Asp	Ile	Asp	Met	Leu	Arg	Ala	Tyr	Lys	Asp	Gly	Val	Val	Ser	Arg	Leu
		195					200					205			
Thr	Gly	Gly	Leu	Ala	Gly	Met	Ala	Lys	Ser	Arg	Lys	Val	Asp	Val	Ile
	210					215					220				
Gln	Gly	Asp	Gly	Gln	Phe	Leu	Asp	Pro	His	His	Leu	Glu	Val	Ser	Leu
225					230					235					240
Thr	Ala	Gly	Asp	Ala	Tyr	Glu	Gln	Ala	Ala	Pro	Thr	Gly	Glu	Lys	Lys
				245					250					255	
Ile	Val	Ala	Phe	Lys	Asn	Cys	Ile	Ile	Ala	Ala	Gly	Ser	Arg	Val	Thr
			260					265					270		
Lys	Leu	Pro	Phe	Ile	Pro	Glu	Asp	Pro	Arg	Ile	Ile	Asp	Ser	Ser	Gly
		275					280					285			
Ala	Leu	Ala	Leu	Lys	Glu	Val	Pro	Gly	Lys	Leu	Leu	Ile	Ile	Gly	Gly
	290					295					300				
Gly	Ile	Ile	Gly	Leu	Glu	Met	Gly	Thr	Val	Tyr	Ser	Thr	Leu	Gly	Ser
305					310					315					320
Arg	Leu	Asp	Val	Val	Glu	Met	Met	Asp	Gly	Leu	Met	Gln	Gly	Ala	Asp
				325					330					335	
Arg	Asp	Leu	Val	Lys	Val	Trp	Gln	Lys	Gln	Asn	Glu	Tyr	Arg	Phe	Asp
			340					345					350		
Asn	Ile	Met	Val	Asn	Thr	Lys	Thr	Val	Ala	Val	Glu	Pro	Lys	Glu	Asp
		355					360					365			
Gly	Val	Tyr	Val	Thr	Phe	Glu	Gly	Ala	Asn	Ala	Pro	Lys	Glu	Pro	Gln

370 375 168 380
 Arg Tyr Asp Ala Val Leu Val Ala Ala Gly Arg Ala Pro Asn Gly Lys
 385 390 395 400
 Leu Ile Ser Ala Glu Lys Ala Gly Val Ala Val Thr Asp Arg Gly Phe
 405 410 415
 Ile Glu Val Asp Lys Gln Met Arg Thr Asn Val Pro His Ile Tyr Ala
 420 425 430
 Ile Gly Asp Ile Val Gly Gln Pro Met Leu Ala His Lys Ala Val His
 435 440 445
 Glu Gly His Val Ala Ala Glu Asn Cys Ala Gly His Lys Ala Tyr Phe
 450 455 460
 Asp Ala Arg Val Ile Pro Gly Val Ala Tyr Thr Ser Pro Glu Val Ala
 465 470 475 480
 Trp Val Gly Glu Thr Glu Leu Ser Ala Lys Ala Ser Gly Arg Lys Ile
 485 490 495
 Thr Lys Ala Asn Phe Pro Trp Ala Ala Ser Gly Arg Ala Ile Ala Asn
 500 505 510
 Gly Cys Asp Asn Gly Phe Thr Lys Leu Ile Phe Asp Ala Glu Thr Gly
 515 520 525
 Arg Ile Ile Gly Gly Gly Ile Val Gly Pro Asn Gly Gly Asp Met Ile
 530 535 540
 Gly Glu Val Cys Leu Ala Ile Glu Met Gly Cys Asp Ala Ala Asp Ile
 545 550 555 560
 Gly Lys Thr Ile His Pro His Pro Thr Leu Gly Glu Ser Ile Gly Met
 565 570 575
 Ala Ala Glu Val Ala Leu Gly Thr Cys Thr Asp Leu Pro Pro Gln Lys
 580 585 590
 Lys Lys

<210> 130
 <211> 261
 <212> PRT
 <213> Neisseria meningitidis

<400> 130
 Met Asn Pro Phe Leu Asn Thr Ala Phe Lys Ala Ala Arg Arg Ala Gly
 1 5 10 15
 Gln Met Met Ile Arg Ala Ala Gly Asn Leu Asp Ala Val Lys Thr Asp
 20 25 30
 Ser Lys Ala Phe Asn Asp Phe Val Ser Asp Val Asp Arg Asn Ser Glu
 35 40 45
 Ile Ile Leu Val Glu Ala Leu Lys Glu Ala Tyr Pro His His Lys Ile
 50 55 60
 Thr Cys Glu Glu Ser Gly Ser His Gly Lys Ala Ala Ala Glu Tyr Glu
 65 70 75 80

Trp Ile Ile Asp Pro Leu Asp Gly Thr Thr Asn Phe Leu His Gly His
 85 90 95
 Pro Gln Tyr Ala Ile Ser Met Ala Leu Leu His Lys Gly Val Leu Gln
 100 105 110
 Glu Ala Leu Val Tyr Ala Pro Glu Arg Asn Asp Val Tyr Met Ala Ser
 115 120 125
 Arg Gly Lys Gly Ala Leu Leu Asn Asp Arg Arg Ile Arg Val Ser Asn
 130 135 140
 Arg Ile Glu Leu Asn Arg Cys Leu Ile Gly Thr Gly Phe Pro Val Val
 145 150 155 160
 Asp Gln Ser Met Met Asp Lys Tyr Leu Ala Ile Leu Lys Asp Phe Leu
 165 170 175
 Ala Lys Thr Ala Gly Gly Arg Arg Glu Gly Ala Ala Ser Leu Asp Leu
 180 185 190
 Cys Ala Val Ala Thr Gly Arg Phe Asp Gly Phe Phe Glu Phe Asn Leu
 195 200 205
 Lys Pro Trp Asp Ile Ala Ala Gly Ala Leu Ile Val Gln Glu Ala Gly
 210 215 220
 Gly Ile Val Thr Asp Met Ser Gly Glu Asp Gly Trp Leu Glu Ser Gly
 225 230 235 240
 Asp Ile Val Ala Ala Asn Pro Lys Val Leu Ala Gln Met Leu Lys Ile
 245 250 255
 Ile Ser Ala His Val
 260

<210> 131
 <211> 481
 <212> PRT
 <213> Neisseria meningitidis

<400> 131
 Met Thr Gln Tyr Thr Leu Lys Gln Ala Ser Val Leu Leu Gln Ser Lys
 1 5 10 15
 Gln Ile Ser Ala Val Glu Leu Ala Ser Ala Tyr Leu Ala Ala Ile Ala
 20 25 30
 Glu Lys Asn Pro Ala Leu Asn Gly Tyr Ile Thr Ile Asp Gln Asp Lys
 35 40 45
 Thr Leu Ala Glu Ala Arg Ala Asp Glu Arg Ile Ala Gln Gly Asn
 50 55 60
 Ala Ser Ala Leu Thr Gly Val Pro Val Ala Tyr Lys Asp Ile Phe Cys
 65 70 75 80
 Gln Thr Gly Trp Arg Ser Ala Cys Ala Ser Lys Met Leu Asp Asn Phe
 85 90 95
 Ile Ser Pro Tyr Thr Ala Thr Val Val Gln Asn Leu Leu Asp Glu Gly
 100 105 110

Met Val Thr Leu Gly Arg Thr Asn Met Asp Glu Phe Ala Met Gly Ser
 115 120 125
 Thr Asn Glu Asn Ser Phe Tyr Gly Ala Ala Lys Asn Pro Trp Asn Leu
 130 135 140
 Glu His Val Pro Gly Gly Ser Ser Gly Gly Ser Ala Ala Val Val Ala
 145 150 155 160
 Ala Arg Leu Ala Pro Ala Ala Leu Gly Ser Asp Thr Gly Gly Ser Ile
 165 170 175
 Arg Gln Pro Ala Ser His Cys Gly Ile Thr Gly Ile Lys Pro Thr Tyr
 180 185 190
 Gly Thr Val Ser Arg Phe Gly Met Val Ala Tyr Ala Ser Ser Phe Asp
 195 200 205
 Gln Thr Gly Pro Met Ala Gln Thr Ala Glu Asp Cys Ala Ile Leu Leu
 210 215 220
 Asn Ala Met Ala Gly Phe Asp Pro Lys Asp Ser Thr Ser Leu Glu Arg
 225 230 235 240
 Glu Lys Glu Asp Tyr Thr Arg Asp Leu Asn Gln Pro Leu Lys Gly Leu
 245 250 255
 Lys Ile Gly Leu Pro Lys Glu Tyr Phe Gly Glu Gly Asn Ser Ala Asp
 260 265 270
 Val Leu Thr Ala Leu Gln Asn Thr Ile Asp Leu Leu Lys Ala Gln Gly
 275 280 285
 Ala Glu Leu Ile Glu Val Ser Leu Pro Gln Thr Lys Leu Ser Ile Pro
 290 295 300
 Ala Tyr Tyr Val Leu Ala Ser Ala Glu Ala Ser Thr Asn Leu Ser Arg
 305 310 315 320
 Tyr Asp Gly Val Arg Tyr Gly His Arg Ala Ala Gln Phe Ala Asp Leu
 325 330 335
 Glu Glu Met Tyr Gly Lys Thr Arg Ala Glu Gly Phe Gly Ser Glu Val
 340 345 350
 Lys Arg Arg Ile Met Ile Gly Thr Tyr Val Leu Ser His Gly Tyr Tyr
 355 360 365
 Asp Ala Tyr Tyr Leu Lys Ala Gln Lys Leu Arg Arg Leu Val Ala Asp
 370 375 380
 Asp Phe Gln Thr Ala Phe Ala Arg Cys Asp Leu Ile Leu Ala Pro Thr
 385 390 395 400
 Ala Pro Thr Ala Ala Pro Lys Ile Gly Ala Asp Ala Ser Pro Val Glu
 405 410 415
 Thr Tyr Leu Ser Asp Ile Tyr Thr Ile Ala Val Asn Leu Ala Gly Leu
 420 425 430
 Pro Ala Leu Thr Leu Pro Ala Gly Phe Ser Gly Gly Gly Leu Pro Val
 435 440 445
 Gly Val Gln Leu Val Gly Asn Tyr Phe Ala Glu Ala Lys Ile Leu Gly

450 455 171 460
 Ala Ala His Gln Ile Gln Leu Asn Ser Asp Trp His Gly Lys Arg Pro
 465 470 475 480

Glu

<210> 132
 <211> 476
 <212> PRT
 <213> Neisseria meningitidis

<400> 132
 Met Thr Trp Glu Thr Val Ile Gly Leu Glu Ile His Val Gln Leu Asn
 1 5 10 15
 Thr Lys Ser Lys Ile Phe Ser Gly Ala Ser Thr Ala Phe Gly Ala Glu
 20 25 30
 Pro Asn Ala His Ala Ser Val Val Glu Cys Ala Leu Pro Gly Val Leu
 35 40 45
 Pro Val Met Asn Arg Glu Val Val Glu Lys Ala Ile Lys Leu Gly Leu
 50 55 60
 Ala Leu Asp Ala Lys Ile Asn Gln Lys Asn Val Phe Asp Arg Lys Asn
 65 70 75 80
 Tyr Phe Tyr Pro Asp Leu Pro Lys Gly Tyr Gln Ile Ser Gln Leu Asp
 85 90 95
 Leu Pro Ile Val Glu His Gly Lys Leu Glu Ile Val Val Gly Asp Asp
 100 105 110
 Val Lys Thr Ile Asn Val Thr Arg Ala His Met Glu Glu Asp Ala Gly
 115 120 125
 Lys Ser Val His Glu Gly Leu Asn Gly Ala Thr Gly Ile Asp Leu Asn
 130 135 140
 Arg Ala Gly Thr Pro Leu Leu Glu Val Val Ser Glu Pro Glu Met Arg
 145 150 155 160
 Ser Ala Ala Glu Ala Val Ala Tyr Ala Lys Ala Leu His Ser Leu Val
 165 170 175
 Thr Trp Leu Asp Ile Cys Asp Gly Asn Met Ala Glu Gly Ser Phe Arg
 180 185 190
 Val Asp Ala Asn Val Ser Val Arg Pro Lys Gly Gln Glu Glu Phe Gly
 195 200 205
 Thr Arg Arg Glu Ile Lys Asn Leu Asn Ser Phe Arg Phe Leu Glu Gln
 210 215 220
 Ala Ile Asn Tyr Glu Ala Glu Ala Gln Ile Glu Ile Leu Glu Asp Gly
 225 230 235 240
 Gly Lys Val Gln Gln Ala Thr Met Leu Phe Asp Pro Glu Lys Gly Glu
 245 250 255
 Thr Arg Val Met Arg Leu Lys Glu Asp Ala His Asp Tyr Arg Tyr Phe
 260 265 270

Pro Asp Pro Asp Leu Leu Pro Val Ile Ile Ser Asp Ala Gln Met Gln
 275 280 285
 Lys Ala Lys Ala Glu Met Pro Glu Leu Pro Lys Glu Met Ala Ala Arg
 290 295 300
 Phe Val Ala Asp Tyr Gly Val Ser Glu Tyr Asp Ala Arg Leu Leu Thr
 305 310 315 320
 Ala Ser Arg Ala Gln Ala Ala Tyr Phe Glu Glu Ala Ala Lys Glu Ser
 325 330 335
 Gly Gln Gly Lys Leu Thr Ala Asn Trp Met Asn Gly Glu Leu Ala Ala
 340 345 350
 Ala Leu Asn Lys Glu Gly Met Glu Leu Ala Asp Ser Pro Ile Thr Ala
 355 360 365
 Pro Arg Leu Ala Ala Leu Val Gly Lys Ile Ala Asp Gly Thr Leu Ser
 370 375 380
 Ser Lys Leu Ala Lys Lys Ala Phe Glu Ala Met Trp Ala Glu Pro Glu
 385 390 395 400
 Ala Thr Ile Ala Glu Ile Ile Glu Lys His Gly Leu Gln Gln Met Thr
 405 410 415
 Asp Thr Gly Glu Ile Glu Ala Met Val Asp Glu Val Leu Ala Asn Asn
 420 425 430
 Ala Lys Ala Val Glu Gln Phe Lys Ser Gly Asn Glu Lys Ala Leu Asn
 435 440 445
 Ala Ile Val Gly Gln Val Met Lys Ala Ser Lys Gly Lys Ala Asn Pro
 450 455 460
 Ala Gln Val Gln Glu Leu Ile Lys Ala Lys Leu Ala
 465 470 475

<210> 133
 <211> 414
 <212> PRT
 <213> Neisseria meningitidis

<400> 133
 Met Ser Asn Glu Asn Arg Thr Cys Ser Phe Cys Gly Lys Ser Lys Ser
 1 5 10 15
 His Val Lys His Leu Ile Glu Gly Glu Asn Ala Phe Ile Cys Asp Glu
 20 25 30
 Cys Val Ser Asn Cys Ile Glu Ile Leu His Glu Asp Gly Asn Asp Gly
 35 40 45
 Thr Pro Ser Glu Ser Ala Gly Gly Glu Pro Glu Glu Ser Gly Lys Leu
 50 55 60
 Pro Thr Pro Ala Glu Ile Val Ala Asn Leu Asn Asp His Val Ile Gly
 65 70 75 80
 Gln Glu Gln Ala Lys Lys Ala Leu Ala Val Ser Val Tyr Asn His Tyr
 85 90 95

Lys Arg Leu Arg His Pro Lys Ala Gly Ala Asn Val Glu Leu Ser Lys
 100 105 110 173
 Ser Asn Ile Leu Leu Ile Gly Pro Thr Gly Ser Gly Lys Thr Leu Leu
 115 120 125
 Ala Gln Ser Leu Ala Arg Lys Leu Asp Val Pro Phe Val Met Ala Asp
 130 135 140
 Ala Thr Thr Leu Thr Glu Ala Gly Tyr Val Gly Glu Asp Val Glu Gln
 145 150 155 160
 Ile Ile Thr Lys Leu Leu Gly Lys Cys Asp Phe Asp Val Glu Lys Ala
 165 170 175
 Gln Arg Gly Ile Val Tyr Ile Asp Glu Ile Asp Lys Ile Ser Arg Lys
 180 185 190
 Ser Asp Asn Pro Ser Ile Thr Arg Asp Val Ser Gly Glu Gly Val Gln
 195 200 205
 Gln Ala Leu Leu Lys Leu Ile Glu Gly Thr Val Ala Ser Val Pro Pro
 210 215 220
 Gln Gly Gly Arg Lys His Pro Asn Gln Glu Phe Ile Asn Val Asp Thr
 225 230 235 240
 Thr Asn Ile Leu Phe Ile Cys Gly Gly Ala Phe Ala Gly Leu Glu Lys
 245 250 255
 Val Ile Arg Gln Arg Thr Glu Lys Gly Gly Ile Gly Phe Gly Ala Ser
 260 265 270
 Val His Ser Lys Asp Glu Asn Ala Asp Ile Thr Lys Leu Phe Gly Ile
 275 280 285
 Val Glu Pro Glu Asp Leu Ile Lys Phe Gly Leu Ile Pro Glu Leu Ile
 290 295 300
 Gly Arg Leu Pro Val Ile Ala Thr Leu Glu Glu Leu Asp Glu Asp Ala
 305 310 315 320
 Leu Ile Asn Ile Leu Thr Glu Pro Lys Asn Ala Leu Val Lys Gln Tyr
 325 330 335
 Gln Ala Leu Phe Gly Met Glu Asn Val Glu Leu Glu Phe Glu Glu Gly
 340 345 350
 Ala Leu Arg Ser Ile Ala Arg Gln Ala Met Glu Arg Lys Thr Gly Ala
 355 360 365
 Arg Gly Leu Arg Ser Ile Val Glu Arg Cys Leu Leu Asp Thr Met Tyr
 370 375 380
 Arg Leu Pro Asp Leu Lys Gly Leu Lys Lys Val Val Val Gly Lys Ala
 385 390 395 400
 Val Ile Glu Glu Gly Arg Glu Pro Glu Leu Val Phe Glu Ser
 405 410

<210> 134
 <211> 404
 <212> PRT
 <213> Neisseria meningitidis

<400> 134
 Met Thr Val Lys Thr Pro Val Tyr Leu Asp Tyr Ala Ala Thr Pro Pro
 1 5 10 15
 Val Asp Lys Arg Val Ala Glu Lys Met Ile Pro Tyr Leu Thr Glu Thr
 20 25 30
 Phe Gly Asn Pro Ala Ser Asn Ser His Ser Phe Gly Trp Glu Ala Glu
 35 40 45
 Glu Ala Val Glu Lys Ala Arg Ala Asp Ile Ala Ala Leu Ile Asn Ala
 50 55 60
 Asp Ser Lys Glu Ile Val Phe Thr Ser Gly Ala Thr Glu Ser Asn Asn
 65 70 75 80
 Leu Ala Ile Lys Gly Ala Ala His Phe Tyr Lys Ser Lys Gly Asn His
 85 90 95
 Leu Ile Thr Val Lys Thr Glu His Lys Ala Val Leu Asp Thr Met Arg
 100 105 110
 Glu Leu Glu Arg Gln Gly Tyr Glu Val Thr Tyr Leu Asp Val Gln Glu
 115 120 125
 Asn Gly Leu Val Asp Leu Asp Val Leu Lys Ala Ala Ile Arg Glu Asp
 130 135 140
 Thr Ile Leu Val Ser Val Met Trp Val Asn Asn Glu Ile Gly Val Val
 145 150 155 160
 Gln Asp Ile Pro Ala Ile Gly Glu Ile Cys Arg Glu Arg Lys Ile Ile
 165 170 175
 Phe His Val Asp Ala Ala Gln Ala Cys Gly Lys Val Pro Val Asp Val
 180 185 190
 Glu Ala Ala Lys Val Asp Leu Leu Ser Met Ser Gly His Lys Val Tyr
 195 200 205
 Gly Pro Lys Gly Ile Gly Ala Leu Tyr Val Arg Arg Lys Pro Arg Val
 210 215 220
 Arg Leu Glu Ala Gln Met His Gly Gly Gly His Glu Arg Gly Phe Arg
 225 230 235 240
 Ser Gly Thr Leu Pro Thr His Gln Ile Val Gly Met Gly Glu Ala Phe
 245 250 255
 Arg Ile Ala Lys Glu Glu Leu Ala Gln Asp Thr Ala His Tyr Leu Lys
 260 265 270
 Leu Arg Asp Ile Phe Leu Lys Gly Ile Glu Gly Ile Glu Glu Val Tyr
 275 280 285
 Ile Asn Gly Asp Leu Glu His Arg Val Pro Asn Asn Leu Asn Val Ser
 290 295 300
 Phe Asn Phe Val Glu Gly Glu Ser Leu Ile Met Ala Val Lys Glu Leu
 305 310 315 320
 Ala Val Ser Ser Gly Ser Ala Cys Thr Ser Ala Ser Leu Glu Pro Ser
 325 330 335

Tyr Val Leu Arg Ala Leu Gly Arg Asn Asp Glu Leu Ala His Ser Ser
 340 345 350
 Leu Arg Ile Thr Phe Gly Arg Met Thr Thr Glu Glu Glu Val Gln Phe
 355 360 365
 Ala Ala Glu Leu Ile Lys Ser Lys Ile Gly Lys Leu Arg Glu Leu Ser
 370 375 380
 Pro Leu Trp Glu Met Phe Lys Asp Gly Ile Asp Leu Asn Ser Ile Glu
 385 390 395 400
 Trp Ala Ala His

<210> 135
 <211> 328
 <212> PRT
 <213> Neisseria meningitidis

<400> 135
 Met Ser Ser Thr Pro Asn Lys Gln Ala Gly Tyr Pro Arg Leu Val Ala
 1 5 10 15
 Asp Ile Gly Gly Thr Asn Ala Arg Phe Ala Leu Glu Thr Ala Pro Arg
 20 25 30
 Val Ile Glu Lys Ala Ala Val Leu Pro Cys Lys Asp Tyr Asp Thr Val
 35 40 45
 Thr Asp Ala Val Arg Ala Tyr Leu Asn Gln Ser Gly Ala Thr Ala Val
 50 55 60
 Arg His Ala Ala Phe Ala Ile Ala Asn Pro Ile Leu Gly Asp Trp Val
 65 70 75 80
 Gln Met Thr Asn His His Trp Ala Phe Ser Ile Glu Thr Thr Arg Gln
 85 90 95
 Thr Leu Gly Leu Asp Thr Leu Ile Leu Leu Asn Asp Phe Thr Ala Gln
 100 105 110
 Ala Leu Ala Val Thr Gln Thr Ser Ser Lys Asp Leu Met Gln Val Gly
 115 120 125
 Gly Gln Lys Pro Val Glu Phe Ala Pro Lys Ala Val Ile Gly Pro Gly
 130 135 140
 Thr Gly Leu Gly Val Ser Gly Leu Val His Ser His Ala Gly Trp Val
 145 150 155 160
 Ala Leu Ala Gly Glu Gly Gly His Thr Ser Phe Pro Pro Phe Asp Asp
 165 170 175
 Met Glu Val Leu Ile Trp Gln Tyr Ala Lys Asn Lys Tyr Gly His Val
 180 185 190
 Ser Ala Glu Arg Phe Leu Ser Gly Ala Gly Leu Ser Leu Val Tyr Glu
 195 200 205
 Ala Leu Ala Ala Lys Gln Lys Ala Lys Pro Ala Lys Leu Met Pro Ser
 210 215 220

Glu Ile Thr Glu Lys Ala Leu Ser Gly Ala Ser Pro Leu Cys Arg Gln
 225 230 235 240
 Thr Leu Asp Ile Phe Cys Ala Met Leu Gly Thr Val Ala Ser Asn Leu
 245 250 255
 Ala Leu Thr Leu Gly Ala Arg Gly Gly Val Tyr Leu Cys Gly Gly Ile
 260 265 270
 Ile Pro Arg Val Leu Glu Tyr Phe Lys Thr Ser Pro Phe Arg Ser Arg
 275 280 285
 Phe Glu Asn Lys Gly Arg Phe Glu Ala Tyr Leu Ala Ala Ile Pro Val
 290 295 300
 Tyr Val Val Leu Ser Glu Phe Pro Gly Ile Ser Gly Ala Ala Ala Ala
 305 310 315 320
 Leu Asp Asn His Leu Arg Asn Val
 325

<210> 136
 <211> 481
 <212> PRT
 <213> Neisseria meningitidis

<400> 136
 Met Ser Thr Gln Thr Asn Phe Asp Leu Val Leu Phe Gly Ala Thr Gly
 1 5 10 15
 Asp Leu Ala Met Arg Lys Leu Leu Pro Cys Leu Tyr Gln Ala His Val
 20 25 30
 Ala Gly Leu Leu His Pro Glu Gly Arg Ile Leu Gly Val Ser Arg Ser
 35 40 45
 Glu Leu Asp Thr Glu Gly Phe Leu Ala Lys Val Glu Thr Ser Ser Lys
 50 55 60
 Ile His Val Lys Glu Asn Phe Ser Asp Glu Ala Trp Ala Ser Phe Val
 65 70 75 80
 Glu Arg Phe Ala Tyr Leu Lys Val Asp Val Thr Gln Pro Asp Asp Phe
 85 90 95
 Ala Ala Leu Gly Asp Leu Val Lys Ala Arg Lys Glu Thr Asp Asn Val
 100 105 110
 Val Ile Tyr Leu Ser Thr Ala Pro Lys Phe Phe Ala Gln Ala Cys Glu
 115 120 125
 Asn Leu Ala Ala Ile Gly Leu Asn Ala Asp Asn Val Arg Val Val Leu
 130 135 140
 Glu Lys Pro Leu Gly Thr Asp Leu Ala Ser Ser Gln Gln Ile Asn Thr
 145 150 155 160
 Asp Val Ala Arg Tyr Phe Lys Glu Gly Gln Ile Tyr Arg Ile Asp His
 165 170 175
 Tyr Leu Gly Lys Glu Ser Leu Gln Asn Leu Leu Ala Leu Arg Phe Ala
 180 185 190
 Asn Val Met Phe Glu Pro Leu Trp Asn Asn Lys Tyr Ile Glu Ser Val

	195		200	177	205	
Gln	Leu Thr Ile Ala Glu	Gln Leu Gly Val Glu	Glu Glu Arg Gly Glu Phe			
210		215		220		
Tyr Asp Ile Thr Gly Ala	Leu Arg Asp Met Val	Gln Asn His Leu Met				
225	230		235			240
Gln Met Leu Cys Met Thr Ala Met Glu Ala Pro Ala Ser Leu Asp Ala						
	245		250			255
Asp Ala Val Arg Asp Glu Lys Val Lys Val Ile Lys Ser Leu Lys Pro						
	260		265			270
Leu Thr Val Glu Ser Val Asn Glu Asn Val Val Arg Gly Gln Tyr Thr						
	275		280			285
Ala Ala Arg Gly Met Asn Gly Tyr Leu Glu Glu Ile Asn Val Pro Gln						
	290		295			300
Asp Ser Phe Thr Glu Thr Tyr Val Ala Ile Lys Ala Glu Ile Glu Asn						
	305		310			315
Glu Arg Trp Lys Gly Val Pro Phe Tyr Leu Arg Thr Gly Lys Arg Met						
	325		330			335
Ala Gly Lys Val Ala Glu Ile Val Leu Asn Phe Lys Asp Leu Asn Ser						
	340		345			350
His Ile Phe Glu Gly Ser Arg Thr Ala Pro Asn Arg Leu Val Ile Glu						
	355		360			365
Leu Gln Pro Tyr Glu Ser Val Arg Leu Tyr Thr Gln Met Lys Thr Pro						
	370		375			380
Gly Ala Gly Asn Lys Val Glu Thr Val Pro Leu Ala Thr Asp Leu Gly						
	385		390			395
Lys Ala Leu Glu Gly Arg Arg Ala Glu Ala Tyr Glu Arg Leu Leu Leu						
	405		410			415
Asp Val Ile Asn Gly Lys Leu Ala Leu Phe Asn Arg Arg Asp Glu Leu						
	420		425			430
Glu Ala Ala Trp Glu Tyr Val Met Pro Ile Leu Glu Asn Trp Thr Asn						
	435		440			445
Asn Thr Thr Pro Pro His Gly Tyr Gly Ala His Ser Trp Gly Pro Glu						
	450		455			460
Ala Ala Arg Glu Leu Leu Ala Arg Asp Gly His Lys Trp His Glu Glu						
	465		470			475
						480
Gln						

<210> 137
 <211> 503
 <212> PRT
 <213> Neisseria meningitidis

<400> 137
 Met Ser Glu Gln Asn His Pro Gln Thr Glu Pro Gln Leu Asp Glu Asn
 1 5 10 15

Gln Ile Ile Ala Leu Arg Arg Glu Lys Leu His Asn Ile Arg Gln Gln
 20 25 30
 Arg Asn Ala Tyr Pro Asn Asp Phe Lys Arg Asp Ser Phe Ala Ala Asp
 35 40 45
 Leu His Ala Gln Tyr Gly Glu Ile Gly Lys Glu Glu Leu Asp Pro Gln
 50 55 60
 Gly Ile Pro Val Lys Val Ala Gly Arg Met Met Leu Lys Arg Gln Met
 65 70 75 80
 Gly Lys Ala Ser Phe Ala Thr Ile Gln Asp Val Ser Gly Gln Ile Gln
 85 90 95
 Leu Tyr Leu Asn Asn Lys Gly Val Ser Gln Glu Val Leu Asp Asp Phe
 100 105 110
 Asn His Trp Asp Leu Gly Asp Ile Val Gly Ala Glu Gly Thr Leu Phe
 115 120 125
 Lys Thr Asn His Gly Glu Leu Thr Val Arg Val Ser Gly Ile Arg Leu
 130 135 140
 Leu Ser Lys Ser Leu Arg Pro Leu Pro Asp Lys His Lys Gly Leu Ser
 145 150 155 160
 Asp Gln Glu Thr Lys Tyr Arg Gln Arg Tyr Val Asp Leu Ile Ala Asn
 165 170 175
 Glu Glu Ser Arg Asn Thr Phe Ile Lys Arg Ser Gln Ile Ile Gln Ser
 180 185 190
 Val Arg Asn Phe Met Val Gly Glu His Tyr Leu Glu Val Glu Thr Pro
 195 200 205
 Met Met His Pro Ile Pro Gly Gly Ala Thr Ala Lys Pro Phe Val Thr
 210 215 220
 His His Asn Ala Leu Asp Ile Pro Leu Tyr Leu Arg Ile Ala Pro Glu
 225 230 235 240
 Leu Tyr Leu Lys Arg Leu Val Val Gly Gly Leu Glu Arg Val Phe Glu
 245 250 255
 Ile Asn Arg Ser Phe Arg Asn Glu Gly Met Ser Val Arg His Asn Pro
 260 265 270
 Glu Phe Thr Met Ile Glu Phe Tyr Glu Ala Phe Ser Asp Tyr Glu Arg
 275 280 285
 Met Met Gln Met Ala Glu Asp Ile Ile Arg Asn Ala Ser Arg Thr Val
 290 295 300
 Asn Gly Thr Ala Asn Ile Thr Tyr Asn Gly Lys Glu Val Asp Leu Glu
 305 310 315 320
 Ser Pro Phe Glu Arg Leu Thr Ile Leu Glu Ala Ile Lys Lys Tyr Asn
 325 330 335
 Pro His Tyr Thr Asp Glu Gln Leu Asn Asp Ala Glu Trp Leu Lys Lys
 340 345 350

179

Glu Ile Val Lys His Gly Glu Ser Leu Pro Pro Ser Pro Gly Ile Gly
355 360 365

Ser Leu Gln Leu Ala Leu Phe Glu Gly Cys Ala Glu Gly Lys Leu Trp
370 375 380

Asn Pro Thr Phe Ile Val Asp Tyr Pro Val Glu Val Ser Pro Leu Ala
385 390 395 400

Arg Ala Ser Asp Thr Lys Gln Gly Leu Thr Glu Arg Phe Glu Leu Phe
405 410 415

Val Val Gly Arg Glu Leu Ala Asn Gly Tyr Ser Glu Leu Asn Asp Pro
420 425 430

Glu Asp Gln Ala Glu Arg Phe Lys Ala Gln Val Val Gln Lys Asp Ala
435 440 445

Gly Asp Asp Glu Ala Met His Tyr Asp Ala Asp Tyr Ile Arg Ala Met
450 455 460

Glu Phe Gly Leu Pro Pro Thr Gly Gly Cys Gly Ile Gly Ile Asp Arg
465 470 475 480

Leu Val Met Leu Leu Thr Asp Ser Gln Thr Ile Arg Asp Val Ile Leu
485 490 495

Phe Pro Gln Met Arg Pro Glu
500

<210> 138
<211> 392
<212> PRT
<213> Neisseria meningitidis

<400> 138
Met Arg Lys Lys Leu Thr Ala Leu Val Leu Ser Ala Leu Pro Leu Ala
1 5 10 15

Ala Val Ala Asp Val Ser Leu Tyr Gly Glu Ile Lys Ala Gly Val Glu
20 25 30

Gly Arg Asn Tyr Gln Leu Gln Leu Thr Glu Ala Gln Ala Ala Asn Gly
35 40 45

Gly Ala Ser Gly Gln Val Lys Val Thr Lys Val Thr Lys Ala Lys Ser
50 55 60

Arg Ile Arg Thr Lys Ile Ser Asp Phe Gly Ser Phe Ile Gly Phe Lys
65 70 75 80

Gly Ser Glu Asp Leu Gly Asp Gly Leu Lys Ala Val Trp Gln Leu Glu
85 90 95

Gln Asp Val Ser Val Ala Gly Gly Gly Ala Thr Gln Trp Gly Asn Arg
100 105 110

Glu Ser Phe Ile Gly Leu Ala Gly Glu Phe Gly Thr Leu Arg Ala Gly
115 120 125

Arg Val Ala Asn Gln Phe Asp Asp Ala Ser Gln Ala Ile Asp Pro Trp
130 135 140

Asp Ser Asn Asn Asp Val Ala Ser Gln Leu Gly Ile Phe Lys Arg His

181

Phe Gly Pro Glu Ser Ser Gly Lys Thr Thr Leu Cys Leu Glu Ala Val
 65 70 75 80
 Ala Gln Cys Gln Lys Asn Gly Gly Val Cys Ala Phe Val Asp Ala Glu
 85 90 95
 His Ala Phe Asp Pro Val Tyr Ala Arg Lys Leu Gly Val Lys Val Glu
 100 105 110
 Glu Leu Tyr Leu Ser Gln Pro Asp Thr Gly Glu Gln Ala Leu Glu Ile
 115 120 125
 Cys Asp Thr Leu Val Arg Ser Gly Gly Ile Asp Met Val Val Val Asp
 130 135 140
 Ser Val Ala Ala Leu Val Pro Lys Ala Glu Ile Glu Gly Asp Met Gly
 145 150 155 160
 Asp Ser His Val Gly Leu Gln Ala Arg Leu Met Ser Gln Ala Leu Arg
 165 170 175
 Lys Leu Thr Gly His Ile Lys Lys Thr Asn Thr Leu Val Val Phe Ile
 180 185 190
 Asn Gln Ile Arg Met Lys Ile Gly Val Met Phe Gly Ser Pro Glu Thr
 195 200 205
 Thr Thr Gly Gly Asn Ala Leu Lys Phe Tyr Ser Ser Val Arg Leu Asp
 210 215 220
 Ile Arg Arg Thr Gly Ser Ile Lys Lys Gly Glu Glu Val Leu Gly Asn
 225 230 235 240
 Glu Thr Arg Val Lys Val Ile Lys Asn Lys Val Ala Pro Pro Phe Arg
 245 250 255
 Gln Ala Glu Phe Asp Ile Leu Tyr Gly Glu Gly Ile Ser Trp Glu Gly
 260 265 270
 Glu Leu Ile Asp Ile Gly Val Lys Asn Asp Ile Ile Asn Lys Ser Gly
 275 280 285
 Ala Trp Tyr Ser Tyr Asn Gly Ala Lys Ile Gly Gln Gly Lys Asp Asn
 290 295 300
 Val Arg Val Trp Leu Lys Glu Asn Pro Glu Val Ala Asn Glu Ile Asp
 305 310 315 320
 Ala Lys Ile Arg Ala Leu Asn Gly Val Glu Met His Ile Thr Glu Gly
 325 330 335
 Thr Gln Asp Glu Thr Asp Gly Glu Arg Pro Glu Glu
 340 345

<210> 140
 <211> 379
 <212> PRT
 <213> Neisseria meningitidis

<400> 140
 Met Gln Asn Ile Phe Asp Pro Leu Val Ile Arg Gly Lys Ser Leu Thr
 1 5 10 15

Pro Ile Val Gln Gly Gly Met Gly Val Gly Val¹⁸² Ser Ala Ser Gly Leu
 20 25 30
 Ser Ser Ala Val Ala Arg Glu Asn Gly Ile Gly Thr Ile Ala Ser Val
 35 40 45
 Asp Leu Arg His Leu His Glu Asp Leu Leu Ala Glu Ser Gln Ile Asn
 50 55 60
 Pro Ser Glu Glu Lys Tyr Thr Ser Leu Asn Cys Thr Ala Leu Asp Arg
 65 70 75 80
 Glu Ile Gln Lys Ala Lys Ser Ala Ser Glu Gly Lys Gly Leu Ile Ala
 85 90 95
 Val Asn Val Met Lys Ala Val Lys Asp His Ala Ala Tyr Val Arg Gln
 100 105 110
 Ala Cys Glu Ser Gly Ala Asp Ala Val Val Met Gly Ala Gly Leu Pro
 115 120 125
 Leu Asp Leu Pro Glu Met Thr Glu Gly Tyr His Lys Asp Val Ala Leu
 130 135 140
 Leu Pro Ile Leu Ser Glu Ser Arg Gly Ile Asn Ile Val Leu Lys Arg
 145 150 155 160
 Trp Met Lys Lys Gly Ile Leu Pro Asp Ala Ile Val Val Glu His Pro
 165 170 175
 Ala His Ala Ala Gly His Leu Gly Ala Ser Thr Val Glu Gly Val Asn
 180 185 190
 Asp Ala Lys Phe Asp Phe Lys Arg Val Ile Glu Glu Thr Phe Glu Val
 195 200 205
 Phe Lys Ser Leu Gly Leu Glu Ser Glu Lys Ile Pro Leu Ile Leu Ala
 210 215 220
 Gly Gly Met Ala Asn Phe Glu Lys Val Lys Thr Ala Leu Lys Asn Trp
 225 230 235 240
 Gly Ala Ser Ala Val Gln Ile Gly Thr Ala Phe Ala Val Thr Glu Glu
 245 250 255
 Gly Asp Ala His Leu Asn Phe Lys Lys Thr Leu Ala Gly Ala Glu Thr
 260 265 270
 Glu Lys Val Val Glu Phe Met Ser Val Ala Gly Leu Pro Ala Arg Gly
 275 280 285
 Val Arg Thr Lys Phe Leu Asp Ser Tyr Ile Lys Arg Glu Ser Lys Leu
 290 295 300
 Gln Thr Asn Ala Lys Ala Asp Pro Arg Arg Cys Thr Gln Gly Leu Asn
 305 310 315 320
 Cys Leu Thr Ser Cys Gly Leu Arg Asp Gly Leu Ser Lys Ala Gly Gln
 325 330 335
 Phe Cys Ile Asp Ile Gln Leu Ala Ala Ala Phe Arg Gly Glu Val Asp
 340 345 350
 Lys Gly Leu Phe Phe Arg Gly Lys Asp Arg Cys Pro Ser Ala Met Pro

	355				360				183				365			
Ser	Ala 370	Pro	Ser	Ala	Arg	Arg 375	Tyr	Asn	Ile	Cys						
<210>	141															
<211>	659															
<212>	PRT															
<213>	Neisseria meningitidis															
<400>	141															
Met	Ser	Gln	Leu	Ala 5	Asn	Ala	Ile	Arg	Phe 10	Leu	Ser	Ala	Asp	Ala 15	Val	
Gln	Lys	Ala	Asn 20	Ser	Gly	His	Pro	Gly 25	Ala	Pro	Met	Gly	Met 30	Ala	Glu	
Met	Ala	Glu 35	Thr	Leu	Trp	Thr	Lys 40	Phe	Leu	Asn	His	Asn 45	Pro	Ala	Asn	
Pro	Lys 50	Phe	Tyr	Asn	Arg	Asp 55	Arg	Phe	Val	Leu	Ser 60	Asn	Gly	His	Ala	
Ser 65	Met	Leu	Leu	Tyr	Ser 70	Leu	Leu	His	Leu	Thr 75	Gly	Tyr	Asn	Leu	Ser 80	
Ile	Glu	Asp	Leu	Lys 85	Asn	Phe	Arg	Gln	Leu 90	His	Ser	Lys	Thr	Pro 95	Gly	
His	Pro	Glu	Tyr 100	Gly	Tyr	Thr	Asp	Gly 105	Val	Glu	Thr	Thr	Thr 110	Gly	Pro	
Leu	Gly	Gln 115	Gly	Ile	Ala	Asn	Ala 120	Val	Gly	Met	Ala	Leu 125	Ala	Glu	Lys	
Ile	Leu 130	Ala	Ala	Glu	Phe	Asn 135	Lys	Asp	Gly	Leu	Asn 140	Ile	Val	Asp	His	
Tyr 145	Thr	Tyr	Val	Phe	Met 150	Gly	Asp	Gly	Cys	Leu 155	Met	Glu	Gly	Val	Ser 160	
His	Glu	Ala	Cys	Ser 165	Leu	Ala	Gly	Thr	Leu 170	Gly	Leu	Gly	Lys	Leu 175	Ile	
Val	Leu	Tyr	Asp 180	Asp	Asn	Asn	Ile	Ser 185	Ile	Asp	Gly	Lys	Val 190	Asp	Gly	
Trp	Phe	Thr 195	Glu	Asn	Ile	Pro	Gln 200	Arg	Phe	Glu	Ser	Tyr 205	Gly	Trp	His	
Val	Val 210	Pro	Asn	Val	Asn	Gly 215	His	Asp	Thr	Ala	Ala 220	Ile	Gln	Ala	Ala	
Ile 225	Glu	Ala	Ala	Arg	Ala 230	Glu	Thr	Gly	Lys	Pro 235	Ser	Ile	Ile	Cys	Cys 240	
Lys	Thr	Leu	Ile	Gly 245	Lys	Gly	Ser	Ala	Asn 250	Lys	Glu	Gly	Ser	His 255	Lys	
Thr	His	Gly	Ala 260	Pro	Leu	Gly	Ala	Asp 265	Glu	Ile	Glu	Ala	Thr 270	Arg	Lys	
His	Leu	Gly 275	Trp	Thr	Tyr	Pro	Ala 280	Phe	Glu	Ile	Pro	Gln 285	Glu	Ile	Tyr	

Asp Ala Trp Asn Ala Lys Glu Gln Gly Ala Lys Leu Glu Ala Asp Trp
 290 295 300
 Asn Glu Leu Phe Ala Gln Tyr Gln Ala Lys Tyr Pro Ala Glu Ala Ala
 305 310 315 320
 Glu Phe Val Arg Arg Met Asp Lys Lys Leu Pro Asp Asn Phe Asp Glu
 325 330 335
 Tyr Val Gln Ala Ala Leu Lys Glu Val Cys Ala Lys Ala Glu Thr Ile
 340 345 350
 Ala Thr Arg Lys Ala Ser Gln Asn Ser Ile Glu Ile Leu Ala Lys Glu
 355 360 365
 Leu Pro Glu Leu Val Gly Gly Ser Ala Asp Leu Thr Pro Ser Asn Leu
 370 375 380
 Thr Asp Trp Ser Asn Ser Val Ser Val Thr Arg Asp Lys Gly Gly Asn
 385 390 395 400
 Tyr Ile His Tyr Gly Val Arg Glu Phe Gly Met Gly Ala Ile Met Asn
 405 410 415
 Gly Leu Val Leu His Gly Gly Val Lys Pro Phe Gly Ala Thr Phe Leu
 420 425 430
 Met Phe Ser Glu Tyr Glu Arg Asn Ala Leu Arg Met Ala Ala Leu Met
 435 440 445
 Lys Ile Asn Pro Val Phe Val Phe Thr His Asp Ser Ile Gly Leu Gly
 450 455 460
 Glu Asp Gly Pro Thr His Gln Pro Ile Glu Gln Thr Ala Thr Leu Arg
 465 470 475 480
 Leu Ile Pro Asn Met Asp Val Trp Arg Pro Cys Asp Thr Ala Glu Ser
 485 490 495
 Leu Val Ala Trp Ala Glu Ala Val Lys Ala Ala Asp His Pro Ser Cys
 500 505 510
 Leu Ile Phe Ser Arg Gln Asn Leu Lys Phe Gln Ala Arg Ser Glu Gln
 515 520 525
 Gln Leu Asn Asp Ile Lys Arg Gly Gly Tyr Val Ile Ser Glu Ala Gln
 530 535 540
 Gly Asn Ala Gln Ala Val Ile Ile Ala Thr Gly Ser Glu Val Glu Leu
 545 550 555 560
 Ala Leu Glu Ala Gln Lys Ala Leu Ala Ala Gln Asn Ile Ala Val Arg
 565 570 575
 Val Val Ser Met Pro Ser Thr Asn Val Phe Asp Arg Gln Asp Ala Ala
 580 585 590
 Tyr Gln Ala Ala Val Leu Pro Glu Gly Leu Pro Arg Ile Ala Val Glu
 595 600 605
 Ala Gly His Ala Asp Gly Trp Tyr Lys Tyr Val Gly Leu Asn Gly Ala
 610 615 620

Val Val Gly Ile Asn Arg Phe Gly Glu Ser Ala¹⁸⁵ Pro Ala Asp Leu Leu
625 630 635 640
Phe Lys Ala Phe Gly⁶⁴⁵ Phe Thr Val Asp Asn⁶⁵⁰ Val Val Asp Thr Val⁶⁵⁵ Lys
Ser Val Leu

<210> 142
<211> 336
<212> PRT
<213> Neisseria meningitidis

<400> 142
Met Ser Lys Lys Arg Val Leu Thr Gly Val¹⁰ Thr Thr Thr Gly Ile¹⁵ Pro
1 5
His Leu Gly Asn Tyr Val Gly Ala Ile²⁵ Arg Pro Ala Val Arg³⁰ Ala Ala
20
Gln Asn Leu³⁵ Asp Thr Glu Ser Phe⁴⁰ Leu Phe Leu Ala Asp⁴⁵ Tyr His Gly
35
Ile Ile⁵⁰ Lys Cys His Glu Pro⁵⁵ Glu Met Ile His Gln⁶⁰ Ser Thr Gln Ala
50
Val Ala Ala Thr Trp Leu⁷⁰ Ala Cys Gly Leu Asp⁷⁵ Pro Glu Arg Thr Thr⁸⁰
65
Phe Tyr Arg Gln⁸⁵ Ser Asp Thr Pro Glu Val⁹⁰ Met Glu Leu Asn Trp⁹⁵ Ile
85
Leu Thr Cys Ile¹⁰⁰ Thr Ala Lys Gly Leu¹⁰⁵ Met Asn Arg Ala His¹¹⁰ Ala Tyr
100
Lys Ala Ala Val Gln Ala Asn Ala¹²⁰ Glu Asn Gly Gln Glu¹²⁵ Asp Pro Asp
115
Phe Gly Val Glu Met Gly Leu¹³⁵ Phe Ser Tyr Pro Ile¹⁴⁰ Leu Met Thr Ala
130
Asp Ile Leu Met Phe Asn¹⁵⁰ Ala Asn Glu Val Pro¹⁵⁵ Val Gly Arg Asp Gln¹⁶⁰
145
Ile Gln His Val Glu¹⁶⁵ Met Ala Arg Asp Ile¹⁷⁰ Ala Gly Arg Phe Asn¹⁷⁵ His
165
Arg Phe Arg Glu¹⁸⁰ Leu Phe Thr Leu Pro¹⁸⁵ Glu Val Lys Ile Asp¹⁹⁰ Glu Asn
180
Val Glu Leu¹⁹⁵ Leu Val Gly Leu Asp²⁰⁰ Gly Arg Lys Met Ser²⁰⁵ Lys Ser Tyr
195
Gly Asn Thr Ile Pro Leu Trp²¹⁵ Glu Asn Asp Lys Lys²²⁰ Thr Gln Lys Ser
210
Val Asn Lys Ile Ile Thr²³⁰ Asn Met Lys Glu Pro²³⁵ Gly Glu Pro Lys Gln²⁴⁰
225
Pro Asp Glu Ser Pro²⁴⁵ Leu Phe Glu Ile Tyr²⁵⁰ Lys Ala Phe Ser Thr²⁵⁵ Pro
245
ser Glu Thr Val Glu Phe Thr Lys Met Leu Ala Asp Gly Leu Ala Trp

260 265 186 270
 Gly Glu Ala Lys Lys Leu Leu Ala Ala Lys Ile Asn Ala Glu Leu Ala
 275 280 285
 Glu Pro Arg Glu Arg Tyr Asn Glu Leu Thr Ala Asp Pro Ser Gln Ile
 290 295 300
 Glu Glu Ile Leu Gln Ala Gly Ala Ala Lys Ala Arg Lys Glu Ala Arg
 305 310 315 320
 Glu Leu Leu Asp Lys Val Arg Asp Ala Val Gly Ile Arg Pro Leu Lys
 325 330 335

<210> 143
 <211> 859
 <212> PRT
 <213> Neisseria meningitidis

<400> 143
 Met Arg Tyr Asp Lys Leu Thr Ala Lys Phe Gln Gln Ala Leu Ala Glu
 1 5 10 15
 Ala Gln Ser Leu Ala Leu Ala Ala Asp Gly Ser Tyr Leu Glu Ala Gly
 20 25 30
 Phe Val Leu Lys Ala Leu Leu Asp Asp Gln Asn Ser Gly Ala Ala Ala
 35 40 45
 Leu Leu Ala His Ala Gly Val Asn Val Pro Gln Val Lys Gln Arg Leu
 50 55 60
 Gln Gln His Leu Asn Ser Leu Pro Lys Val Ser Gly Gln Gly Gly Asp
 65 70 75 80
 Ile Leu Pro Ser Arg Glu Leu Gln Ala Val Leu Asn Leu Met Asp Lys
 85 90 95
 Ala Ala Thr Lys Arg Ser Asp Ala Tyr Ile Ala Ser Glu Leu Phe Leu
 100 105 110
 Leu Ala Leu Val Gln Gln Asn Asp Ala Thr Gly Lys Ile Leu Lys Glu
 115 120 125
 Ala Gly Ala Thr Glu Gln Asn Ile Asn Ala Ala Ile Asp Ala Val Arg
 130 135 140
 Gly Gly Gln Asn Val Asn Asp Ala Asn Ala Glu Asp Gln Arg Asp Ala
 145 150 155 160
 Leu Lys Lys Tyr Thr Leu Asp Leu Thr Gln Arg Ala Arg Asp Gly Lys
 165 170 175
 Leu Asp Pro Val Ile Gly Arg Asp Asp Glu Ile Arg Arg Ala Ile Gln
 180 185 190
 Val Leu Gln Arg Arg Thr Lys Asn Asn Pro Val Leu Ile Gly Glu Pro
 195 200 205
 Gly Val Gly Lys Thr Ala Ile Val Glu Gly Leu Ala Gln Arg Ile Val
 210 215 220
 Asn Gly Glu Val Pro Glu Ser Leu Arg Asn Lys Arg Leu Leu Val Leu

225										230				187 235				240	
Asp	Leu	Ala	Ala	Leu 245	Ile	Ala	Gly	Ala	Lys 250	Tyr	Arg	Gly	Glu	Phe 255	Glu				
Glu	Arg	Leu	Lys 260	Gly	Val	Leu	Asn	Asp 265	Leu	Ala	Lys	Asp	Asp 270	Gly	Asn				
Thr	Leu	Ile 275	Phe	Ile	Asp	Glu	Ile 280	His	Thr	Leu	Val	Gly 285	Ala	Gly	Lys				
Thr	Asp 290	Gly	Ala	Met	Asp	Ala 295	Gly	Asn	Met	Leu	Lys 300	Pro	Ala	Leu	Ala				
Arg 305	Gly	Glu	Leu	His	Cys 310	Ile	Gly	Ala	Thr	Thr 315	Leu	Asp	Glu	Tyr	Arg 320				
Gln	Tyr	Ile	Glu	Lys 325	Asp	Ala	Ala	Leu	Glu 330	Arg	Arg	Phe	Gln	Lys 335	Val				
Leu	Val	Gly	Glu 340	Pro	Ser	Val	Glu	Asp 345	Thr	Ile	Ala	Ile	Leu 350	Arg	Gly				
Leu	Gln	Glu 355	Arg	Tyr	Glu	Ile	His 360	His	Gly	Ile	Asp	Ile 365	Thr	Asp	Pro				
Ala	Ile 370	Val	Ala	Ala	Ala	Glu 375	Leu	Ser	Asp	Arg	Tyr 380	Ile	Thr	Asp	Arg				
Phe 385	Leu	Pro	Asp	Lys	Ala 390	Ile	Asp	Leu	Ile	Asp 395	Glu	Ala	Ala	Ser	Arg 400				
Val	Lys	Met	Glu	Lys 405	Glu	Thr	Lys	Pro	Glu 410	Ala	Met	Asp	Lys	Ile 415	Asp				
Arg	Arg	Leu	Ile 420	Gln	Leu	Arg	Met	Glu 425	Lys	Ala	His	Val	Glu 430	Lys	Glu				
Lys	Asp	Asp 435	Ala	Ser	Lys	Lys	Arg 440	Leu	Glu	Leu	Ile	Asp 445	Glu	Glu	Ile				
Asn	Gly 450	Leu	Gln	Lys	Glu	Tyr 455	Ala	Asp	Leu	Asp	Glu 460	Ile	Trp	Lys	Ala				
Glu 465	Lys	Ala	Ile	Ser	Asp 470	Gly	Ala	Ala	Asn	Ile 475	Lys	Lys	Gln	Ile	Asp 480				
Glu	Val	Lys	Ile	Lys 485	Ile	Glu	Gln	Ala	Lys 490	Arg	Gln	Gly	Asp	Leu 495	Ala				
Leu	Ala	Ser	Lys 500	Leu	Met	Tyr	Glu	Asp 505	Leu	Glu	His	Leu	Glu 510	Lys	Gln				
Arg	Ala	Ala 515	Ala	Glu	Arg	Ala	Asp 520	Thr	Asp	Ser	Thr	Lys 525	Pro	Ala	Asn				
Lys	Leu 530	Leu	Arg	Asn	Asn	Val 535	Gly	Ala	Glu	Glu	Ile 540	Ala	Glu	Val	Val				
Ser 545	Arg	Met	Thr	Gly	Ile 550	Pro	Val	Ser	Lys	Met 555	Met	Glu	Gly	Glu	Arg 560				
Asp	Lys	Leu	Leu	Lys 565	Met	Glu	Glu	Val	Leu 570	His	Arg	Arg	Val	Val 575	Gly				

Gln Asp Glu Ala Val Arg Ala Val Ser Asp Ala Ile Arg Arg Ser Arg
 580 585 590
 Ser Gly Leu Ala Asp Pro Asn Lys Pro Tyr Gly Ser Phe Leu Phe Leu
 595 600 605
 Gly Pro Thr Gly Val Gly Lys Thr Glu Leu Cys Lys Ala Leu Ala Gly
 610 615 620
 Phe Leu Phe Asp Ser Glu Asp His Leu Ile Arg Ile Asp Met Ser Glu
 625 630 635 640
 Tyr Met Glu Lys His Ala Val Ala Arg Leu Ile Gly Ala Pro Pro Gly
 645 650 655
 Tyr Val Gly Tyr Glu Glu Gly Gly Tyr Leu Thr Glu Gln Val Arg Arg
 660 665 670
 Lys Pro Tyr Ser Val Ile Leu Leu Asp Glu Val Glu Lys Ala His Pro
 675 680 685
 Asp Val Phe Asn Ile Leu Leu Gln Val Leu Asp Asp Gly Arg Leu Thr
 690 695 700
 Asp Gly Gln Gly Arg Thr Val Asp Phe Lys Asn Thr Val Ile Val Met
 705 710 715 720
 Thr Ser Asn Ile Gly Ser Gln His Ile Gln Gln Met Gly Ile Gln Asp
 725 730 735
 Tyr Glu Ala Val Lys Glu Val Val Met Glu Asp Val Lys Glu His Phe
 740 745 750
 Arg Pro Glu Met Ile Asn Arg Ile Asp Glu Val Val Val Phe His Gly
 755 760 765
 Leu Asp Gln Asp Asn Ile Arg Asn Ile Ala Lys Ile Gln Leu Lys Gly
 770 775 780
 Leu Glu Lys Arg Leu Glu Lys Gln Asn Leu Arg Leu Ala Val Ser Asp
 785 790 795 800
 Ala Ala Leu Asp Ile Ile Ala Lys Ala Gly Phe Asp Pro Ile Tyr Gly
 805 810 815
 Ala Arg Pro Leu Lys Arg Ala Ile Gln Ser Glu Ile Glu Asn Pro Leu
 820 825 830
 Ala Lys Ala Leu Leu Ala Gly Asn Tyr Ala Pro Glu Ser Glu Ile Arg
 835 840 845
 Val Glu Ala Asp Gly Asp Arg Leu Lys Phe Ala
 850 855

<210> 144
 <211> 572
 <212> PRT
 <213> Neisseria meningitidis

<400> 144
 Met Asn Leu His Gln Thr Val Glu His Glu Ala Ala Ala Ala Phe Ala
 1 5 10 15

Ala Ala Gly Ile Ala Asp Ser Pro Ile Val ¹⁸⁹Leu Gln Pro Thr Lys Asn
 20 25 30
 Ala Glu His Gly Asp Phe Gln Ile Asn Gly Val Met Gly Ala Ala Lys
 35 40 45
 Lys Ala Lys Gln Asn Pro Arg Glu Leu Ala Gln Lys Val Ala Glu Ala
 50 55 60
 Leu Ala Asp Asn Ala Val Ile Glu Ser Ala Glu Val Ala Gly Pro Gly
 65 70 75 80
 Phe Ile Asn Leu Arg Leu Arg Pro Glu Phe Leu Ala Gln Asn Ile Gln
 85 90 95
 Thr Ala Leu Asn Asp Ala Arg Phe Gly Val Ala Lys Thr Asp Lys Pro
 100 105 110
 Gln Thr Val Val Ile Asp Tyr Ser Ser Pro Asn Leu Ala Lys Glu Met
 115 120 125
 His Val Gly His Leu Arg Ser Ser Ile Ile Gly Asp Ser Ile Ser Arg
 130 135 140
 Val Leu Ala Phe Met Gly Asn Thr Val Ile Arg Gln Asn His Val Gly
 145 150 155 160
 Asp Trp Gly Thr Gln Phe Gly Met Leu Val Ala Tyr Leu Val Glu Gln
 165 170 175
 Gln Lys Asp Asn Ala Ala Phe Glu Leu Ala Asp Leu Glu Gln Phe Tyr
 180 185 190
 Arg Ala Ala Lys Val Arg Phe Asp Glu Asp Pro Ala Phe Ala Asp Thr
 195 200 205
 Ala Arg Glu Tyr Val Val Lys Leu Gln Gly Gly Asp Glu Thr Val Leu
 210 215 220
 Ala Leu Trp Lys Gln Phe Val Asp Ile Ser Leu Ser His Ala Gln Ala
 225 230 235 240
 Val Tyr Asp Thr Leu Gly Leu Lys Leu Arg Pro Glu Asp Val Ala Gly
 245 250 255
 Glu Ser Lys Tyr Asn Asp Asp Leu Gln Pro Val Val Asp Asp Leu Val
 260 265 270
 Gln Lys Gly Leu Ala Val Glu Asp Asp Gly Ala Lys Val Val Phe Leu
 275 280 285
 Asp Glu Phe Lys Asn Lys Glu Gly Glu Pro Ala Ala Phe Ile Val Gln
 290 295 300
 Lys Gln Gly Gly Gly Phe Leu Tyr Ala Ser Thr Asp Leu Ala Cys Leu
 305 310 315 320
 Arg Tyr Arg Ile Gly Arg Leu Lys Ala Asp Arg Leu Leu Tyr Val Val
 325 330 335
 Asp His Arg Gln Ala Leu His Phe Glu Gln Leu Phe Thr Thr Ser Arg
 340 345 350
 Lys Ala Gly Tyr Leu Pro Glu Asn Val Gly Ala Ala Phe Ile Gly Phe

355 360 190 365
 Gly Thr Met Met Gly Lys Asp Gly Lys Pro Phe Lys Thr Arg Ser Gly
 370 375 380
 Asp Thr Val Lys Leu Val Asp Leu Leu Thr Glu Ala Val Glu Arg Ala
 385 390 395 400
 Thr Ala Leu Val Lys Glu Lys Asn Pro Glu Leu Gly Ala Asp Glu Ala
 405 410 415
 Ala Lys Ile Gly Lys Thr Val Gly Ile Gly Ala Val Lys Tyr Ala Asp
 420 425 430
 Leu Ser Lys Asn Arg Thr Ser Asp Tyr Val Phe Asp Trp Asp Ala Met
 435 440 445
 Leu Ser Phe Glu Gly Asn Thr Ala Pro Tyr Leu Gln Tyr Ala Tyr Thr
 450 455 460
 Arg Val Gln Ser Val Phe Arg Lys Ala Gly Glu Trp Asp Ala Asn Ala
 465 470 475 480
 Pro Thr Val Leu Thr Glu Pro Leu Glu Lys Gln Leu Ala Ala Glu Leu
 485 490 495
 Leu Lys Phe Glu Asp Val Leu Gln Ser Val Ala Asp Thr Ala Tyr Pro
 500 505 510
 His Tyr Leu Ala Ala Tyr Leu Tyr Gln Ile Ala Thr Leu Phe Ser Arg
 515 520 525
 Phe Tyr Glu Ala Cys Pro Ile Leu Lys Ala Glu Gly Ala Ser Arg Asn
 530 535 540
 Ser Arg Leu Gln Leu Ala Lys Leu Thr Gly Asp Thr Leu Lys Gln Gly
 545 550 555 560
 Leu Asp Leu Leu Gly Ile Asp Val Leu Asp Val Met
 565 570

<210> 145
 <211> 398
 <212> PRT
 <213> Neisseria meningitidis

<400> 145
 Met Ser Gln Lys Leu Ile Leu Val Leu Asn Cys Gly Ser Ser Ser Leu
 1 5 10 15
 Lys Gly Ala Val Leu Asp Asn Gly Ser Gly Glu Val Leu Leu Ser Cys
 20 25 30
 Leu Ala Glu Lys Leu Asn Leu Pro Asp Ala Tyr Ile Thr Phe Lys Val
 35 40 45
 Asn Gly Glu Lys His Lys Val Asp Leu Ser Ala His Pro Asp His Thr
 50 55 60
 Gly Ala Val Glu Ala Leu Met Glu Glu Leu Lys Ala His Gly Leu Asp
 65 70 75 80
 Ser Arg Ile Gly Ala Ile Gly His Arg Val Val Ser Gly Gly Glu Leu
 85 90 95

Tyr Ser Glu Ser Ile Leu Val Asp Asp Glu Val Ile Ala Gly Ile Glu
 100 105 110
 Lys Cys Ile Pro Leu Ala Pro Leu His Asn Pro Ala His Leu Leu Gly
 115 120 125
 Leu Arg Ala Ala Gln Ser Ile Phe Lys Gly Leu Pro Asn Val Val Val
 130 135 140
 Phe Asp Thr Ser Phe His Gln Thr Met Pro Glu Val Ala Tyr Lys Tyr
 145 150 155 160
 Ala Val Pro Gln Glu Leu Tyr Glu Lys Tyr Gly Leu Arg Arg Tyr Gly
 165 170 175
 Ala His Gly Thr Ser Tyr Arg Phe Val Ala Asp Glu Thr Ala Arg Phe
 180 185 190
 Leu Gly Lys Asp Lys Lys Asp Leu Arg Met Val Ile Ala His Leu Gly
 195 200 205
 Asn Gly Ala Ser Ile Thr Ala Val Ala Asn Gly Glu Ser Arg Asp Thr
 210 215 220
 Ser Met Gly Leu Thr Pro Leu Glu Gly Leu Val Met Gly Thr Arg Ser
 225 230 235 240
 Gly Asp Ile Asp Pro Ser Val Phe Gly Phe Leu Ala Glu Asn Ala Asn
 245 250 255
 Met Thr Ile Ala Gln Ile Thr Glu Met Leu Asn Lys Lys Ser Gly Leu
 260 265 270
 Leu Gly Ile Ser Gly Leu Ser Asn Asp Cys Arg Thr Ile Glu Glu Glu
 275 280 285
 Ala Ala Lys Gly His Lys Gly Ala Lys Leu Ala Leu Asp Met Phe Ile
 290 295 300
 Tyr Arg Leu Ala Lys Tyr Ile Gly Ser Met Ala Val Ala Ala Gly Gly
 305 310 315 320
 Leu Asp Ala Leu Val Phe Thr Gly Gly Ile Gly Glu Asn Ser Asp Ile
 325 330 335
 Ile Arg Glu Arg Val Ile Gly Tyr Leu Gly Phe Leu Gly Leu Asn Ile
 340 345 350
 Asp Gln Glu Ala Asn Leu Lys Ala Arg Phe Gly Asn Ala Gly Val Ile
 355 360 365
 Thr Thr Ala Asp Ser Lys Ala Val Ala Val Val Ile Pro Thr Asn Glu
 370 375 380
 Glu Leu Met Ile Ala His Asp Thr Ala Arg Leu Ser Gly Leu
 385 390 395

<210> 146
 <211> 183
 <212> PRT
 <213> Neisseria meningitidis
 <400> 146

Met Lys Ala Tyr Leu Ala Leu Ile Ser Ala Ala Val Ile Gly Leu Ala
 1 5 10 15
 Ala Cys Ser Gln Glu Pro Ala Ala Pro Ala Ala Glu Ala Thr Pro Ala
 20 25 30
 Ala Glu Ala Pro Ala Ser Glu Ala Pro Ala Ala Glu Ala Ala Pro Ala
 35 40 45
 Asp Ala Ala Glu Ala Pro Ala Ala Gly Asn Cys Ala Ala Thr Val Glu
 50 55 60
 Ser Asn Asp Asn Met Gln Phe Asn Thr Lys Asp Ile Gln Val Ser Lys
 65 70 75 80
 Ala Cys Lys Glu Phe Thr Ile Thr Leu Lys His Thr Gly Thr Gln Pro
 85 90 95
 Lys Ala Ser Met Gly His Asn Leu Val Ile Ala Lys Ala Glu Asp Met
 100 105 110
 Asp Gly Val Phe Lys Asp Gly Val Gly Ala Ala Asp Thr Asp Tyr Val
 115 120 125
 Lys Pro Asp Asp Ala Arg Val Val Ala His Thr Lys Leu Ile Gly Gly
 130 135 140
 Gly Glu Glu Ala Ser Leu Thr Leu Asp Pro Ala Lys Leu Ala Asp Gly
 145 150 155 160
 Glu Tyr Lys Phe Ala Cys Thr Phe Pro Gly His Gly Ala Leu Met Asn
 165 170 175
 Gly Lys Val Thr Leu Val Asp
 180

<210> 147
 <211> 916
 <212> PRT
 <213> Neisseria meningitidis

<400> 147
 Met Leu Thr Asn Ile Ala Lys Lys Ile Phe Gly Ser Arg Asn Asp Arg
 1 5 10 15
 Leu Leu Lys Gln Tyr Arg Lys Ser Val Ala Arg Ile Asn Ala Leu Glu
 20 25 30
 Glu Gln Met Gln Ala Leu Ser Asp Ala Asp Leu Gln Ala Lys Thr Ala
 35 40 45
 Glu Phe Lys Gln Arg Leu Ala Asp Gly Gln Thr Leu Asp Gly Ile Leu
 50 55 60
 Pro Glu Ala Phe Ala Val Cys Arg Glu Ala Ser Arg Arg Thr Leu Gly
 65 70 75 80
 Met Arg His Phe Asp Val Gln Leu Ile Gly Gly Met Val Leu His Asp
 85 90 95
 Gly Lys Ile Ala Glu Met Arg Thr Gly Glu Gly Lys Thr Leu Val Ala
 100 105 110
 Thr Leu Ala Val Tyr Leu Asn Ala Leu Ala Gly Lys Gly Val His Val

									193						
	115					120					125				
Val	Thr	Val	Asn	Asp	Tyr	Leu	Ala	Ser	Arg	Asp	Ala	Gly	Ile	Met	Glu
	130					135					140				
Pro	Leu	Tyr	Asn	Phe	Leu	Gly	Leu	Thr	Val	Gly	Val	Ile	Ile	Ser	Asp
145					150					155					160
Met	Gln	Pro	Phe	Asp	Arg	Gln	Asn	Ala	Tyr	Ala	Ala	Asp	Ile	Thr	Tyr
				165					170					175	
Gly	Thr	Asn	Asn	Glu	Phe	Gly	Phe	Asp	Tyr	Leu	Arg	Asp	Asn	Met	Val
			180					185					190		
Thr	Asp	Gln	Tyr	Asp	Lys	Val	Gln	Arg	Glu	Leu	Asn	Phe	Ala	Val	Val
	195						200					205			
Asp	Glu	Val	Asp	Ser	Ile	Leu	Ile	Asp	Glu	Ala	Arg	Thr	Pro	Leu	Ile
	210					215					220				
Ile	Ser	Gly	Gln	Ala	Asp	Asp	Asn	Ile	Gln	Leu	Tyr	Gln	Ile	Met	Asn
225					230					235					240
Thr	Val	Pro	Pro	His	Leu	Val	Arg	Gln	Glu	Thr	Glu	Glu	Gly	Glu	Gly
				245					250					255	
Asp	Tyr	Trp	Val	Asp	Glu	Lys	Ala	His	Gln	Val	Ile	Leu	Ser	Glu	Ala
			260					265					270		
Gly	His	Glu	His	Ala	Glu	Gln	Ile	Leu	Thr	Gln	Met	Gly	Leu	Leu	Ala
		275					280					285			
Glu	Asn	Asp	Ser	Leu	Tyr	Ser	Ala	Ala	Asn	Ile	Ala	Leu	Met	His	His
	290					295					300				
Leu	Met	Ala	Ala	Leu	Arg	Ala	His	Ser	Leu	Phe	His	Lys	Asp	Gln	His
305					310					315					320
Tyr	Val	Ile	Gln	Asp	Gly	Glu	Ile	Val	Ile	Val	Asp	Glu	Phe	Thr	Gly
				325					330					335	
Arg	Leu	Met	Ser	Gly	Arg	Arg	Trp	Ser	Glu	Gly	Leu	His	Gln	Ala	Val
			340					345					350		
Glu	Ala	Lys	Glu	Gly	Val	Glu	Ile	Lys	Arg	Glu	Asn	Gln	Thr	Leu	Ala
		355					360					365			
Ser	Ile	Thr	Phe	Gln	Asn	Tyr	Phe	Arg	Leu	Tyr	Thr	Lys	Leu	Ser	Gly
	370					375					380				
Met	Thr	Gly	Thr	Ala	Asp	Thr	Glu	Ala	Phe	Glu	Phe	Gln	Ser	Ile	Tyr
385					390					395					400
Asn	Leu	Glu	Thr	Val	Ile	Ile	Pro	Thr	Asn	Arg	Pro	Val	Gln	Arg	Lys
				405					410					415	
Asp	Phe	Asn	Asp	Gln	Ile	Phe	Arg	Ser	Ala	Glu	Glu	Lys	Phe	Glu	Ala
			420					425					430		
Val	Val	Lys	Asp	Ile	Glu	Glu	Cys	His	Lys	Arg	Gly	Gln	Pro	Val	Leu
		435					440					445			
Val	Gly	Thr	Thr	Ser	Ile	Glu	Asn	Ser	Glu	Leu	Val	Ser	Lys	Leu	Leu
	450					455					460				

Thr Gln Ala Gly Leu Pro His Asn Val Leu Asn Ala Lys Glu His Glu
 465 470 475 480
 Arg Glu Ala Leu Ile Val Ala Gln Ala Gly Lys Val Gly Ala Ile Thr
 485 490 495
 Val Ala Thr Asn Met Ala Gly Arg Gly Thr Asp Ile Val Leu Gly Gly
 500 505 510
 Asn Leu Lys His Gln Thr Asp Ala Ile Arg Ala Asp Glu Thr Leu Ser
 515 520 525
 Asp Glu Glu Lys Gln Ala Gln Ile Ala Ala Leu Glu Asp Gly Trp Gln
 530 535 540
 Ala Glu His Asp Lys Val Met Glu Ala Gly Gly Leu His Ile Ile Gly
 545 550 555 560
 Thr Glu Arg His Glu Ser Arg Arg Ile Asp Asn Gln Leu Arg Gly Arg
 565 570 575
 Ser Gly Arg Gln Gly Asp Pro Gly Ser Ser Arg Phe Tyr Leu Ser Phe
 580 585 590
 Glu Asp Pro Leu Leu Arg Leu Phe Ala Leu Asp Arg Ala Ala Ala Ile
 595 600 605
 Leu Asn Arg Leu Ala Pro Glu Arg Gly Val Ala Ile Glu His Asn Leu
 610 615 620
 Leu Thr Arg Gln Ile Glu Gly Ala Gln Arg Lys Val Glu Gly Arg Asn
 625 630 635 640
 Phe Asp Met Arg Lys Gln Val Leu Glu Tyr Asp Asp Val Ala Asn Glu
 645 650 655
 Gln Arg Lys Val Ile Tyr Ser Gln Arg Asn Glu Ile Leu Thr Ser Lys
 660 665 670
 Asp Ile Ser Asp Leu Met Gln Glu Ile Arg Ser Asp Val Val Ser Asp
 675 680 685
 Leu Val Asp Thr Tyr Met Pro Pro Asp Ser Met Glu Glu Gln Trp Asp
 690 695 700
 Ile Pro Thr Leu Glu Asn Arg Leu Ala Ala Glu Phe Arg Leu His Glu
 705 710 715 720
 Asp Ile Gln Ser Trp Leu Lys Ala Asp Asn Ala Ile Asp Gly Gln Asp
 725 730 735
 Ile Lys Glu Arg Leu Ile Glu Arg Ile Glu Asn Glu Tyr Ala Ala Lys
 740 745 750
 Thr Glu Leu Val Gly Lys Gln Ala Met Ala Asp Phe Glu Arg Asn Val
 755 760 765
 Met Leu Gln Val Ile Asp Asn Gln Trp Arg Glu His Leu Ala Ala Met
 770 775 780
 Asp Tyr Leu Arg Gln Gly Ile His Leu Arg Ser Tyr Ala Gln Lys Asn
 785 790 795 800

Pro Lys Gln Glu Tyr Lys Arg Glu Ala Phe Thr Met Phe Gln Asp Leu
 805 810 195 815
 Trp Asn Gly Ile Lys Phe His Ile Ala Ser Leu Leu Thr Ser Val Gln
 820 825 830
 Ile Glu Gln Asn Pro Val Ala Val Val Glu Glu Gln Pro Ile Gly Asn
 835 840 845
 Ile Gln Ser Ile His Ser Glu Ser Pro Asp Met Glu Glu Leu Leu Gly
 850 855 860
 Gln Ser Gln Thr Asp Leu Val Thr Glu Ala Phe Asn Pro Asp Gly Thr
 865 870 875 880
 Asp Phe Ser Pro Glu Ala Leu Glu Ala Arg Gly Gln Ile Val His Arg
 885 890 895
 Asn Asp Pro Cys Pro Cys Gly Ser Gly Leu Lys Tyr Lys Gln Cys His
 900 905 910
 Gly Lys Leu Ala
 915

<210> 148
 <211> 562
 <212> PRT
 <213> Neisseria meningitidis

<400> 148
 Met Leu Asn Lys Asp Gln Phe Ala Asp Asn His Phe Ile Arg Thr Ile
 1 5 10 15
 Ile Glu Glu Asp Leu Glu Ser Gly Lys His Thr Ala Val Gln Thr Arg
 20 25 30
 Phe Pro Pro Glu Pro Asn Gly Tyr Leu His Ile Gly His Ala Lys Ser
 35 40 45
 Ile Cys Leu Asn Phe Gly Leu Ala Tyr Ile Tyr Asp Gly Leu Cys Asn
 50 55 60
 Leu Arg Phe Asp Asp Thr Asn Pro Glu Lys Glu Asn Asp Glu Tyr Val
 65 70 75 80
 Asn Ala Ile Lys Glu Asp Val Glu Trp Leu Gly Phe His Trp Ala Gly
 85 90 95
 Glu Pro Arg Phe Ala Ser Asn Tyr Phe Asp Gln Leu Tyr Asp Tyr Ala
 100 105 110
 Val Gly Leu Ile Lys Asp Gly Lys Ala Tyr Val Asp Asp Leu Thr Pro
 115 120 125
 Glu Glu Met Arg Glu Tyr Arg Gly Thr Leu Thr Glu Ala Gly Lys Asn
 130 135 140
 Ser Pro Tyr Arg Asp Arg Ser Val Glu Glu Asn Leu Asp Leu Phe Thr
 145 150 155 160
 Arg Met Lys Asn Gly Glu Phe Pro Asp Gly Ser Lys Thr Leu Arg Leu
 165 170 175
 Lys Ile Asp Met Ala Ser Gly Asn Ile Asn Met Arg Asp Pro Val Ile

			180					185			196			190			
Tyr	Arg	Ile 195	Arg	Arg	Ala	His	His 200	His	Asn	Thr	Gly	Asp 205	Lys	Trp	Cys		
Ile	Tyr 210	Pro	Met	Tyr	Asp	Tyr 215	Thr	His	Cys	Ile	Ser 220	Asp	Ala	Ile	Glu		
Gly 225	Ile	Thr	His	Ser	Leu 230	Cys	Thr	Leu	Glu	Phe 235	Glu	Ala	His	Arg	Pro 240		
Leu	Tyr	Asp	Cys	Val 245	Leu	Asp	Asn	Ile	Pro 250	Ala	Pro	His	Ala	Thr 255	Arg		
Pro	Arg	Gln	Tyr 260	Glu	Phe	Ser	Arg	Leu 265	Glu	Leu	Leu	Tyr	Thr 270	Ile	Thr		
Ser	Lys	Arg 275	Lys	Leu	Asn	Gln	Leu 280	Val	Val	Glu	Lys	His 285	Val	Ser	Gly		
Trp	Asp 290	Asp	Pro	Arg	Met	Pro 295	Thr	Ile	Ser	Gly	Met 300	Arg	Arg	Arg	Gly		
Tyr 305	Thr	Pro	Glu	Gly	Leu 310	Arg	Leu	Phe	Ala	Lys 315	Arg	Ala	Gly	Ile	Ser 320		
Lys	Ser	Glu	Asn	Ile 325	Val	Asp	Met	Ser	Val 330	Leu	Glu	Gly	Ala	Ile 335	Arg		
Glu	Glu	Leu	Glu 340	Asn	Ser	Ala	Pro	Arg 345	Leu	Met	Ala	Val	Leu 350	Asn	Pro		
Leu	Lys	Val 355	Thr	Leu	Thr	Asn	Phe 360	Glu	Thr	Gly	Arg	Thr 365	Gln	Ser	Arg		
Arg	Ala 370	Ala	Phe	His	Pro	Asn 375	His	Glu	Glu	Met	Gly 380	Glu	Arg	Glu	Val		
Pro 385	Ile	Ser	Gln	Thr	Ile 390	Tyr	Ile	Glu	Ala	Asp 395	Asp	Phe	Ala	Glu	Asn 400		
Pro	Pro	Lys	Gly	Phe 405	Lys	Arg	Leu	Ile	Pro 410	Gly	Gly	Glu	Val	Arg 415	Leu		
Arg	His	Gly	Tyr 420	Val	Ile	Lys	Cys	Asp 425	Glu	Val	Val	Lys	Asp 430	Glu	Ala		
Gly	Asn	Val 435	Val	Glu	Leu	Lys	Cys 440	Ser	Ile	Asp	His	Asp 445	Thr	Leu	Gly		
Lys	Asn 450	Pro	Glu	Gly	Arg	Lys 455	Val	Lys	Gly	Val	Ile 460	His	Trp	Val	Ser		
Ala 465	Glu	His	Ala	Ala	Glu 470	Ile	Lys	Val	Arg	Leu 475	Tyr	Asp	Arg	Leu	Phe 480		
Thr	Val	Glu	Arg	Pro 485	Asp	Ala	Val	Arg	Gly 490	Glu	Asp	Gly	Glu	Tyr 495	Leu		
Pro	Phe	Thr	Asp 500	Phe	Leu	Asn	Pro	Glu 505	Ser	Val	Lys	Glu	Ile 510	Thr	Ala		
Tyr	Ala	Glu 515	Pro	Ala	Ala	Lys	Asp 520	Leu	Pro	Ala	Glu	Ser 525	Arg	Trp	Gln		

Phe Glu Arg Ile Gly Tyr Phe Val Thr Asp Arg Lys Asp His Gly Lys
530 535 540

Asp Thr Pro Val Phe Asn Arg Thr Val Thr Leu Lys Asp Ser Trp Gln
545 550 555 560

Pro Lys

<210> 149

<211> 861

<212> PRT

<213> Neisseria meningitidis

<400> 149

Met Leu Glu Ala Tyr Arg Lys Ala Ala Ala Glu Arg Ala Ala Leu Gly
1 5 10 15

Ile Pro Ala Leu Pro Leu Asn Ala Gln Gln Thr Ala Asp Leu Val Glu
20 25 30

Leu Leu Lys Ser Pro Pro Ala Gly Glu Gly Glu Phe Leu Val Glu Leu
35 40 45

Leu Ala His Arg Val Pro Pro Gly Val Asp Asp Ala Ala Lys Val Lys
50 55 60

Ala Ser Phe Leu Ala Ala Val Ala Glu Gly Ser Ala Ser Ser Pro Leu
65 70 75 80

Ile Ser Pro Glu Tyr Ala Thr Glu Leu Leu Gly Thr Met Leu Gly Gly
85 90 95

Tyr Asn Ile His Ala Leu Ile Glu Leu Leu Asp Asp Asp Lys Leu Ala
100 105 110

Ser Ile Ala Ala Lys Gly Leu Lys His Thr Leu Leu Met Phe Asp Ser
115 120 125

Phe His Asp Val Gln Glu Lys Ala Glu Lys Gly Asn Lys Tyr Ala Gln
130 135 140

Glu Val Leu Gln Ser Trp Ala Asp Ala Glu Trp Phe Ala Ser Arg Ala
145 150 155 160

Lys Val Pro Glu Lys Ile Thr Val Thr Val Phe Lys Val Asp Gly Glu
165 170 175

Thr Asn Thr Asp Asp Leu Ser Pro Ala Pro Asp Ala Trp Ser Arg Pro
180 185 190

Asp Ile Pro Leu His Ala Leu Ala Met Leu Lys Asn Pro Arg Asp Gly
195 200 205

Ile Thr Pro Asp Lys Pro Gly Glu Val Gly Pro Ile Lys Leu Leu Glu
210 215 220

Glu Leu Lys Ala Lys Gly His Pro Val Ala Tyr Val Gly Asp Val Val
225 230 235 240

Gly Thr Gly Ser Ser Arg Lys Ser Ala Thr Asn Ser Val Ile Trp His
245 250 255

Thr Gly Glu Asp Ile Pro Phe Val Pro Asn Lys Arg Phe Gly Gly Val
 260 265 198 270
 Cys Leu Gly Gly Lys Ile Ala Pro Ile Phe Phe Asn Thr Gln Glu Asp
 275 280 285
 Ser Gly Ala Leu Pro Ile Glu Val Asp Val Ser Ala Leu Lys Met Gly
 290 295 300
 Asp Val Val Asp Ile Leu Pro Tyr Glu Gly Lys Ile Val Lys Asn Gly
 305 310 315 320
 Glu Thr Val Ala Glu Phe Glu Leu Lys Ser Gln Val Leu Leu Asp Glu
 325 330 335
 Val Gln Ala Gly Gly Arg Ile Asn Leu Ile Ile Gly Arg Gly Leu Thr
 340 345 350
 Ala Lys Ala Arg Glu Ala Leu Lys Leu Pro Ala Ser Thr Ala Phe Arg
 355 360 365
 Leu Pro Gln Ala Pro Ala Glu Ser Lys Ala Gly Phe Thr Leu Ala Gln
 370 375 380
 Lys Met Val Gly Arg Ala Cys Gly Leu Pro Glu Gly Gln Gly Val Arg
 385 390 395 400
 Pro Gly Thr Tyr Cys Glu Pro Arg Met Thr Thr Val Gly Ser Gln Asp
 405 410 415
 Thr Thr Gly Pro Met Thr Arg Asp Glu Leu Lys Asp Leu Ala Cys Leu
 420 425 430
 Gly Phe Ser Ala Asp Met Val Met Gln Ser Phe Cys His Thr Ala Ala
 435 440 445
 Tyr Pro Lys Pro Val Asp Val Lys Thr His Lys Glu Leu Pro Ala Phe
 450 455 460
 Ile Ser Thr Arg Gly Gly Val Ser Leu Arg Pro Gly Asp Gly Val Ile
 465 470 475 480
 His Ser Trp Leu Asn Arg Leu Leu Leu Pro Asp Thr Val Gly Thr Gly
 485 490 495
 Gly Asp Ser His Thr Arg Phe Pro Ile Gly Ile Ser Phe Pro Ala Gly
 500 505 510
 Ser Gly Leu Val Ala Phe Ala Ala Ala Thr Gly Val Met Pro Leu Asp
 515 520 525
 Met Pro Glu Ser Val Leu Val Arg Phe Ser Gly Lys Leu Gln Pro Gly
 530 535 540
 Val Thr Leu Arg Asp Leu Val Asn Ala Ile Pro Leu Tyr Ala Ile Lys
 545 550 555 560
 Gln Gly Leu Leu Thr Val Ala Lys Ala Gly Lys Lys Asn Ile Phe Ser
 565 570 575
 Gly Arg Ile Leu Glu Ile Glu Gly Leu Pro Asp Leu Lys Val Glu Gln
 580 585 590
 Ala Phe Glu Leu Thr Asp Ala Ser Ala Glu Arg Ser Ala Ala Gly Cys

595					600					605					
Thr	Val	Lys	Leu	Asn	Lys	Glu	Pro	Ile	Ile	Glu	Tyr	Met	Lys	Ser	Asn
610						615					620				
Val	Val	Leu	Met	Lys	Asn	Met	Ile	Ala	Asn	Gly	Tyr	Gln	Asp	Pro	Arg
625					630					635					640
Thr	Leu	Glu	Arg	Arg	Ile	Lys	Ala	Met	Glu	Lys	Trp	Leu	Ala	Asn	Pro
				645					650					655	
Glu	Leu	Leu	Glu	Ala	Asp	Lys	Asp	Ala	Glu	Tyr	Ala	Ala	Val	Ile	Glu
			660					665					670		
Ile	Asn	Met	Asp	Asp	Ile	Lys	Glu	Pro	Ile	Ile	Ala	Cys	Pro	Asn	Asp
		675					680					685			
Pro	Asp	Asp	Val	Cys	Phe	Met	Ser	Glu	Arg	Ser	Gly	Thr	Lys	Ile	Asp
	690					695					700				
Glu	Val	Phe	Ile	Gly	Ser	Cys	Met	Thr	Asn	Ile	Gly	His	Phe	Arg	Ala
705					710					715					720
Ala	Ser	Lys	Leu	Leu	Glu	Gly	Lys	Ala	Asp	Thr	Pro	Val	Arg	Leu	Trp
			725						730					735	
Ile	Ala	Pro	Pro	Thr	Lys	Met	Asp	Ala	Lys	Gln	Leu	Ser	Asp	Glu	Gly
			740					745					750		
His	Tyr	Gly	Val	Leu	Gly	Arg	Ala	Gly	Ala	Arg	Met	Glu	Met	Pro	Gly
		755					760					765			
Cys	Ser	Leu	Cys	Met	Gly	Asn	Gln	Ala	Gln	Val	Arg	Glu	Gly	Ala	Thr
	770					775					780				
Val	Met	Ser	Thr	Ser	Thr	Arg	Asn	Phe	Pro	Asn	Arg	Leu	Gly	Lys	Asn
785					790					795					800
Thr	Phe	Val	Tyr	Leu	Gly	Ser	Ala	Glu	Leu	Ala	Ala	Ile	Cys	Ser	Lys
				805					810					815	
Leu	Gly	Lys	Ile	Pro	Thr	Val	Glu	Glu	Tyr	Gln	Ala	Asn	Ile	Gly	Ile
			820					825					830		
Ile	Asn	Glu	Gln	Gly	Asp	Lys	Ile	Tyr	Arg	Tyr	Met	Asn	Phe	Asn	Glu
		835					840					845			
Ile	Asp	Ser	Tyr	Asn	Glu	Val	Ala	Glu	Thr	Val	Asn	Val			
	850					855					860				
<210>	150														
<211>	337														
<212>	PRT														
<213>	Neisseria meningitidis														
<400>	150														
Met	Gln	Val	Tyr	Tyr	Asp	Lys	Asp	Ala	Asp	Leu	Ser	Leu	Ile	Lys	Gly
1				5					10					15	
Lys	Thr	Val	Ala	Ile	Ile	Gly	Tyr	Gly	Ser	Gln	Gly	His	Ala	His	Ala
			20					25					30		
Ala	Asn	Leu	Lys	Asp	Ser	Gly	Val	Asn	Val	Val	Ile	Gly	Leu	Arg	Gln
		35					40					45			

Gly Ser Ser Trp Lys Lys Ala Glu Ala Ala Gly His Val Val Lys Thr
 50 55 60
 Val Ala Glu Ala Thr Lys Glu Ala Asp Val Val Met Leu Leu Leu Pro
 65 70 75 80
 Asp Glu Thr Met Pro Ala Val Tyr His Ala Glu Val Thr Ala Asn Leu
 85 90 95
 Lys Glu Gly Ala Thr Leu Ala Phe Ala His Gly Phe Asn Val His Tyr
 100 105 110
 Asn Gln Ile Val Pro Arg Ala Asp Leu Asp Val Ile Met Val Ala Pro
 115 120 125
 Lys Gly Pro Gly His Thr Val Arg Ser Glu Tyr Lys Arg Gly Gly Gly
 130 135 140
 Val Pro Ser Leu Ile Ala Val Tyr Gln Asp Asn Ser Gly Lys Ala Lys
 145 150 155 160
 Asp Ile Ala Leu Ser Tyr Ala Ala Ala Asn Gly Gly Thr Lys Gly Gly
 165 170 175
 Val Ile Glu Thr Thr Phe Arg Glu Glu Thr Glu Thr Asp Leu Phe Gly
 180 185 190
 Glu Gln Ala Val Leu Cys Gly Gly Val Val Glu Leu Ile Lys Ala Gly
 195 200 205
 Phe Glu Thr Leu Thr Glu Ala Gly Tyr Ala Pro Glu Met Ala Tyr Phe
 210 215 220
 Glu Cys Leu His Glu Met Lys Leu Ile Val Asp Leu Ile Phe Glu Gly
 225 230 235 240
 Gly Ile Ala Asn Met Asn Tyr Ser Ile Ser Asn Asn Ala Glu Tyr Gly
 245 250 255
 Glu Tyr Val Thr Gly Pro Glu Val Val Asn Ala Ser Ser Lys Glu Ala
 260 265 270
 Met Arg Asn Ala Leu Lys Arg Ile Gln Thr Gly Glu Tyr Ala Lys Met
 275 280 285
 Phe Ile Gln Glu Gly Asn Val Asn Tyr Ala Ser Met Thr Ala Arg Arg
 290 295 300
 Arg Leu Asn Ala Asp His Gln Val Glu Lys Val Gly Ala Gln Leu Arg
 305 310 315 320
 Ala Met Met Pro Trp Ile Thr Ala Asn Lys Leu Val Asp Gln Asp Lys
 325 330 335

Asn

<210> 151
 <211> 575
 <212> PRT
 <213> Neisseria meningitidis
 <400> 151

Met Gln Leu Ser Gly Ala Gln Ile Ile Val Gln Ser Leu Lys Ala Glu
 1 5 10 201
 Gly Val Glu Tyr Val Phe Gly Tyr Pro Gly Gly Ala Val Ile Glu Ile
 20 25 30
 Tyr Asp Ala Leu Phe Gln Leu Asn Lys Phe Lys His Ile Leu Thr Arg
 35 40 45
 His Glu Gln Ala Ala Val His Ala Ala Asp Ala Tyr Ala Arg Val Ser
 50 55 60
 Gly Lys Val Gly Val Ala Leu Val Thr Ser Gly Pro Gly Val Thr Asn
 65 70 75 80
 Ala Leu Thr Gly Ile Ala Thr Ala Tyr Thr Asp Ser Ile Pro Met Val
 85 90 95
 Val Ile Ser Gly Gln Val Gly Asn Ser Leu Ile Gly Thr Asp Ala Phe
 100 105 110
 Gln Glu Val Asp Thr Val Gly Ile Thr Arg Pro Cys Val Lys His Asn
 115 120 125
 Phe Leu Val Thr Asp Ile Asn Glu Leu Ala Glu Thr Ile Lys Lys Ala
 130 135 140
 Phe Gln Ile Ala Ala Ser Gly Arg Pro Gly Pro Val Val Val Asp Val
 145 150 155 160
 Pro Lys Asp Val Thr Gln Ala Met Ala Lys Phe Ser Tyr Pro Gln Glu
 165 170 175
 Asp Ile Phe Ile Arg Ser Tyr Gln Pro Val Val Gln Gly His Ile Gly
 180 185 190
 Gln Ile Lys Lys Ala Val Gln Met Leu Ala Ser Ala Lys Arg Pro Val
 195 200 205
 Val Tyr Phe Gly Gly Gly Val Val Leu Gly Asn Ala Ser Glu Glu Leu
 210 215 220
 Thr Arg Phe Val Arg Met Thr Gly Ala Pro Cys Thr Gly Thr Leu Met
 225 230 235 240
 Gly Leu Gly Ala Tyr Pro Ser Gly Asp Arg Gln Phe Leu Gly Met Leu
 245 250 255
 Gly Met His Gly Thr Tyr Glu Ala Asn Leu Ala Met Gln Asn Ala Asp
 260 265 270
 Val Val Leu Ala Val Gly Ala Arg Phe Asp Asp Arg Val Val Ser Val
 275 280 285
 Pro Ser Lys Phe Phe Glu Lys Ala Lys Lys Val Ile His Ile Asp Val
 290 295 300
 Asp Pro Ser Ser Ile Ala Lys Arg Val Lys Val Asp Ile Pro Ile Val
 305 310 315 320
 Gly Asp Val Lys Asn Val Leu Ser Glu Met Val Ala Leu Trp Gln Lys
 325 330 335
 Gln Glu Ser Val Pro Ser Glu Asp Ala Leu Gly Lys Trp Trp Lys Thr

202

340

345

350

Ile Glu Glu Trp Arg Ser Arg Asp Cys Leu Trp Phe Asp Asn Gly Ser
 355 360 365
 Glu Ile Ile Lys Pro Gln Tyr Val Ile Gln Lys Leu Ala Glu Ile Thr
 370 375 380
 Gly Asn Ser Ala Ile Ile Thr Ser Asp Val Gly Gln His Gln Met Phe
 385 390 395 400
 Ala Ala Gln Tyr Tyr Pro Phe Glu Arg Pro Arg Gln Trp Leu Asn Ser
 405 410 415
 Gly Gly Leu Gly Thr Met Gly Val Gly Leu Pro Tyr Ala Ile Gly Ala
 420 425 430
 Lys Leu Ala Ala Pro Asp Gln Asp Val Phe Cys Ile Thr Gly Asp Gly
 435 440 445
 Ser Ile Gln Met Asn Ile Gln Glu Leu Ser Thr Cys Phe Gln Tyr Arg
 450 455 460
 Ile Pro Val Asn Val Ile Thr Leu Asn Asn Gly Tyr Leu Gly Met Val
 465 470 475 480
 Arg Gln Trp Gln Glu Ile Tyr Tyr Gly Gly Arg Glu Ser Glu Thr Tyr
 485 490 495
 Phe Asp Ser Leu Pro Asp Phe Val Lys Leu Ala Glu Ala Tyr Gly His
 500 505 510
 Ile Gly Ile Arg Val Asp Lys Lys Ser Asp Val Glu Gly Ala Leu Leu
 515 520 525
 Glu Ala Leu Asn Gln Lys Asp Arg Leu Val Phe Ile Asp Phe Leu Thr
 530 535 540
 Asp Gln Lys Gln Asn Val Met Pro Met Val Gly Asn Gly Lys Gly Leu
 545 550 555 560
 Asp Glu Met Val Leu Pro Pro His Met Arg Ala Asp Gly Lys Ala
 565 570 575

<210> 152

<211> 429

<212> PRT

<213> Neisseria meningitidis

<400> 152

Met Lys Lys Leu Asn Thr Gln Ser Pro Asp Phe Gln Ala Gly Leu Lys
 1 5 10 15
 Ala Leu Leu Ala Phe Glu Thr Ala Gln Asn Pro Glu Thr Glu Arg Ile
 20 25 30
 Val Ala Asp Ile Cys Ala Asp Val Gln Lys Arg Gly Asp Ala Ala Leu
 35 40 45
 Ile Glu Tyr Thr Asn Lys Phe Asp Gln Thr Asn Ala Lys Ser Ile Asp
 50 55 60
 Asp Leu Ile Leu Thr Gln Ala Asp Leu Asn Ala Ala Phe Glu Arg Ile
 65 70 75 80

Pro Asn Asp Val Gln Thr Ala Leu Gln Thr Ala Ala Arg Arg Val Glu
 85 90 95
 Ser Tyr His Gln Arg Gln Lys Met Glu Ser Trp Ser Tyr Thr Asp Glu
 100 105 110
 Asp Gly Thr Leu Leu Gly Gln Gln Ile Thr Pro Leu Asp Arg Val Gly
 115 120 125
 Ile Tyr Val Pro Gly Gly Lys Ala Ala Tyr Pro Ser Ser Val Ile Met
 130 135 140
 Asn Ala Met Pro Ala His Val Ala Gly Val Lys Glu Ile Ile Met Val
 145 150 155 160
 Val Pro Thr Pro Lys Gly Glu Arg Asn Asp Ile Val Leu Ala Ala Ala
 165 170 175
 Tyr Val Ala Gly Val Thr Lys Val Phe Thr Val Gly Gly Ala Gln Ala
 180 185 190
 Val Ala Ala Leu Ala Tyr Gly Thr Glu Thr Ile Pro Gln Val Asp Lys
 195 200 205
 Ile Thr Gly Pro Gly Asn Ala Phe Val Ala Ala Ala Lys Arg Arg Val
 210 215 220
 Phe Gly Val Val Gly Ile Asp Met Val Ala Gly Pro Ser Glu Ile Leu
 225 230 235 240
 Val Ile Ala Asp Gly Thr Thr Pro Ala Asp Trp Val Ala Met Asp Leu
 245 250 255
 Phe Ser Gln Ala Glu His Asp Glu Ile Ala Gln Ala Ile Leu Ile Gly
 260 265 270
 Thr Ser Gln Ala Tyr Leu Asp Glu Val Glu Ala Ala Met Asp Arg Leu
 275 280 285
 Ile Glu Thr Met Pro Arg Arg Asp Ile Ile Glu Ala Ser Leu Gly Asn
 290 295 300
 Arg Gly Ala Met Ile Leu Ala Lys Asp Leu Asp Glu Ala Cys Glu Ile
 305 310 315 320
 Ala Asn Tyr Ile Ser Pro Glu His Leu Glu Leu Ser Val Glu Asn Pro
 325 330 335
 Gln Glu Trp Ala Lys Lys Ile Arg His Ala Gly Ala Ile Phe Met Gly
 340 345 350
 Arg Tyr Thr Gly Glu Ser Leu Gly Asp Tyr Cys Ala Gly Pro Asn His
 355 360 365
 Val Leu Pro Thr Ser Arg Thr Ala Arg Phe Ser Ser Pro Leu Gly Thr
 370 375 380
 Tyr Asp Phe Gln Lys Arg Ser Ser Leu Ile Gln Val Ser Glu Gln Gly
 385 390 395 400
 Ala Gln Lys Leu Gly Glu Thr Ala Ser Val Leu Ala His Gly Glu Ser
 405 410 415

Leu Thr Ala His Ala Arg Ala Ala Glu Phe Arg Met Lys
420 425 204

<210> 153
<211> 305
<212> PRT
<213> Neisseria meningitidis

<400> 153
Met Asn Leu Thr Lys Thr Gln Arg Gln Leu His Asn Phe Leu Thr Leu
1 5 10 15
Ala Gln Glu Ala Gly Ser Leu Ser Lys Leu Ala Lys Leu Cys Gly Tyr
20 25 30
Arg Thr Pro Val Ala Leu Tyr Lys Leu Lys Gln Arg Leu Glu Lys Gln
35 40 45
Ala Glu Asp Pro Asp Ala Arg Gly Ile Arg Pro Ser Leu Met Ala Lys
50 55 60
Leu Glu Lys His Thr Gly Lys Pro Lys Gly Trp Leu Asp Arg Lys His
65 70 75 80
Arg Glu Arg Thr Val Pro Glu Thr Ala Ala Glu Ser Thr Gly Thr Ala
85 90 95
Glu Thr Gln Ile Ala Glu Thr Ala Ser Ala Ala Gly Cys Arg Ser Val
100 105 110
Thr Val Asn Arg Asn Thr Cys Glu Thr Gln Ile Thr Val Ser Ile Asn
115 120 125
Leu Asp Gly Ser Gly Lys Ser Arg Leu Asp Thr Gly Val Pro Phe Leu
130 135 140
Glu His Met Ile Asp Gln Ile Ala Arg His Gly Met Ile Asp Ile Asp
145 150 155 160
Ile Ser Cys Lys Gly Asp Leu His Ile Asp Asp His His Thr Ala Glu
165 170 175
Asp Ile Gly Ile Thr Leu Gly Gln Ala Ile Arg Gln Ala Leu Gly Asp
180 185 190
Lys Lys Gly Ile Arg Arg Tyr Gly His Ser Tyr Val Pro Leu Asp Glu
195 200 205
Ala Leu Ser Arg Val Val Ile Asp Leu Ser Gly Arg Pro Gly Leu Val
210 215 220
Tyr Asn Ile Glu Phe Thr Arg Ala Leu Ile Gly Arg Phe Asp Val Asp
225 230 235 240
Leu Phe Glu Glu Phe Phe His Gly Ile Val Asn His Ser Met Met Thr
245 250 255
Leu His Ile Asp Asn Leu Ser Gly Lys Asn Ala His His Gln Ala Glu
260 265 270
Thr Val Phe Lys Ala Phe Gly Arg Ala Leu Arg Met Ala Val Glu His
275 280 285
Asp Pro Arg Met Ala Gly Gln Thr Pro Ser Thr Lys Gly Thr Leu Thr

290

295

205

300

Ala
305

<210> 154

<211> 874

<212> PRT

<213> Neisseria meningitidis

<400> 154

Met Lys Thr Ser Glu Leu Arg Gln Lys Phe Leu Lys Phe Phe Glu Thr
1 5 10 15Lys Gly His Thr Val Val Arg Ser Ser Ser Leu Val Pro His Asp Asp
20 25 30Pro Thr Leu Leu Phe Thr Asn Ala Gly Met Asn Gln Phe Lys Asp Val
35 40 45Phe Leu Gly Phe Asp Lys Arg Pro Tyr Ser Arg Ala Thr Thr Ala Gln
50 55 60Lys Cys Val Arg Ala Gly Gly Lys His Asn Asp Leu Glu Asn Val Gly
65 70 75 80Tyr Thr Ala Arg His His Thr Phe Phe Glu Met Met Gly Asn Phe Ser
85 90 95Phe Gly Asp Tyr Phe Lys Arg Asp Ala Ile His Phe Ala Trp Glu Phe
100 105 110Leu Thr Ser Pro Glu Trp Leu Asn Ile Pro Lys Asp Lys Leu Leu Ala
115 120 125Thr Val Tyr Ala Glu Asp Asp Glu Ala Tyr Asn Ile Trp Leu Asn Glu
130 135 140Ile Gly Met Pro Ser Glu Arg Ile Val Arg Ile Gly Asp Asn Lys Gly
145 150 155 160Ala Lys Tyr Ala Ser Asp Asn Phe Trp Gln Met Gly Asp Thr Gly Pro
165 170 175Cys Gly Pro Cys Ser Glu Ile Phe Tyr Asp His Gly Glu Glu Ile Trp
180 185 190Gly Gly Ile Pro Gly Ser Pro Glu Glu Asp Gly Asp Arg Trp Ile Glu
195 200 205Ile Trp Asn Cys Val Phe Met Gln Phe Asn Arg Asp Glu Gln Gly Asn
210 215 220Met Asn Pro Leu Pro Lys Pro Ser Val Asp Thr Gly Met Gly Leu Glu
225 230 235 240Arg Ile Ala Ala Val Met Gln His Val His Ser Asn Tyr Glu Ile Asp
245 250 255Leu Phe Gln Asp Leu Leu Lys Ala Val Ala Arg Glu Thr Gly Ala Pro
260 265 270Phe Arg Met Glu Glu Pro Ser Leu Lys Val Ile Ala Asp His Ile Arg
275 280 285

Ser Cys Ser Phe Leu Ile Ala Asp Gly Val Leu Pro Ser Asn Glu Gly
 290 295 300
 Arg Gly Tyr Val Leu Arg Arg Ile Ile Arg Arg Ala Val Arg His Gly
 305 310 315 320
 Tyr Lys Leu Gly Gln Ser Lys Pro Phe Phe His Lys Leu Val Ala Asp
 325 330 335
 Leu Val Lys Glu Met Gly Gly Ala Tyr Pro Glu Leu Lys Glu Lys Gln
 340 345 350
 Ala Gln Ile Glu Glu Ala Leu Lys Asn Glu Glu Ser Arg Phe Ala Gln
 355 360 365
 Thr Leu Glu Thr Gly Met Ala Leu Leu Glu Asn Ala Leu Val Lys Gly
 370 375 380
 Gly Lys Thr Leu Gly Gly Glu Ile Ile Phe Lys Leu Tyr Asp Thr Tyr
 385 390 395 400
 Gly Phe Pro Tyr Asp Leu Thr Ala Asp Ile Cys Arg Glu Arg Asn Ile
 405 410 415
 Glu Pro Asp Glu Ala Gly Phe Glu Arg Glu Met Glu Ala Gln Arg Ala
 420 425 430
 Arg Ala Arg Ala Ala Gln Ser Phe Lys Ala Asn Ala Gln Leu Pro Tyr
 435 440 445
 Asp Gly Gln Asp Thr Glu Phe Lys Gly Tyr Ser Glu Arg Gln Thr Glu
 450 455 460
 Ser Lys Val Leu Ala Leu Tyr Lys Asp Gly Glu Gln Val Asn Glu Leu
 465 470 475 480
 Asn Glu Gly Asp Ser Gly Ala Val Val Ile Asp Phe Thr Pro Phe Tyr
 485 490 495
 Ala Glu Ser Gly Gly Gln Val Gly Asp Val Gly Tyr Ile Phe Ser Gly
 500 505 510
 Glu Asn Arg Phe Glu Val Arg Asp Thr Gln Lys Ile Lys Ala Ala Val
 515 520 525
 Phe Gly Gln Phe Gly Val Gln Thr Ser Gly Arg Leu Lys Val Gly Asp
 530 535 540
 Ser Val Thr Ala Lys Val Asp Asp Glu Ile Arg Asn Ala Asn Met Arg
 545 550 555 560
 Asn His Ser Ala Thr His Leu Met His Lys Ala Leu Arg Asp Val Leu
 565 570 575
 Gly Arg His Val Glu Gln Lys Gly Ser Leu Val Thr Ala Glu Ser Thr
 580 585 590
 Arg Phe Asp Ile Ser His Pro Gln Ala Val Thr Ala Glu Glu Ile Ala
 595 600 605
 Glu Val Glu Arg Arg Val Asn Glu Ala Ile Leu Ala Asn Val Ala Val
 610 615 620

Asn Ala Ala Ile Met Ser Met Glu Asp Ala Gln Lys Thr Gly Ala Met
 625 630 635 640
 Met Leu Phe Gly Glu Lys Tyr Gly Glu Glu Val Arg Val Leu Gln Met
 645 650 655
 Gly Gly Phe Ser Thr Glu Leu Cys Gly Gly Thr His Val Ser Arg Thr
 660 665 670
 Gly Asp Ile Gly Leu Phe Lys Ile Ile Ser Glu Gly Gly Ile Ala Ala
 675 680 685
 Gly Val Arg Arg Ile Glu Ala Ile Thr Gly Leu Asn Ala Leu Lys Trp
 690 695 700
 Ala Gln Glu Gln Glu Arg Leu Val Lys Asp Ile Ile Ala Glu Thr Lys
 705 710 715 720
 Ala Gln Thr Glu Lys Asp Val Leu Ala Lys Ile Gln Ala Gly Ala Ala
 725 730 735
 His Ala Lys Ala Leu Glu Lys Glu Leu Ala Arg Ala Lys Ala Glu Leu
 740 745 750
 Ala Val His Ala Gly Ala Lys Leu Leu Asp Asp Ala Lys Asp Leu Gly
 755 760 765
 Ala Ala Lys Leu Val Ala Ala Gln Ile Glu Ala Asp Ala Ala Ala Leu
 770 775 780
 Arg Glu Ile Val Thr Asp Leu Thr Gly Lys Ser Asp Asn Ala Val Ile
 785 790 795 800
 Leu Leu Ala Ala Val Asn Asp Gly Lys Val Ser Leu Cys Ala Gly Val
 805 810 815
 Ser Lys Pro Leu Thr Gly Lys Val Lys Ala Gly Asp Leu Val Lys Phe
 820 825 830
 Ala Ala Glu Gln Val Gly Gly Lys Gly Gly Gly Arg Pro Asp Leu Ala
 835 840 845
 Gln Ala Gly Gly Thr Asp Ala Asp Lys Leu Pro Ala Val Leu Asp Ser
 850 855 860
 Val Lys Asp Trp Val Gly Ala Lys Leu Val
 865 870

<210> 155
 <211> 227
 <212> PRT
 <213> Neisseria meningitidis

<400> 155
 Met Glu Leu Val Phe Ile Arg His Gly Gln Ser Glu Trp Asn Ala Lys
 1 5 10 15
 Asn Leu Phe Thr Gly Trp Arg Asp Val Lys Leu Ser Glu Gln Gly Leu
 20 25 30
 Ala Glu Ala Ala Ala Ala Gly Lys Lys Leu Lys Glu Asn Gly Tyr Glu
 35 40 45
 Phe Asp Ile Ala Phe Thr Ser Val Leu Thr Arg Ala Ile Lys Thr Cys

50 55 208 60
 Asn Ile Val Leu Glu Glu Ser Asp Gln Leu Phe Val Pro Gln Ile Lys
 65 70 75 80
 Thr Trp Arg Leu Asn Glu Arg His Tyr Gly Gln Leu Gln Gly Leu Asp
 85 90 95
 Lys Lys Gln Thr Ala Glu Gln Tyr Gly Asp Glu Gln Val Arg Ile Trp
 100 105 110
 Arg Arg Ser Tyr Asp Thr Leu Pro Pro Leu Leu Asp Lys Asp Asp Glu
 115 120 125
 Phe Ser Ala His Lys Asp Arg Arg Tyr Ala His Leu Pro Ala Asp Val
 130 135 140
 Val Pro Asp Gly Glu Asn Leu Lys Val Thr Leu Glu Arg Val Leu Pro
 145 150 155 160
 Phe Trp Glu Asp Gln Ile Ala Pro Ala Ile Leu Ser Gly Lys Arg Val
 165 170 175
 Leu Val Ala Ala His Gly Asn Ser Leu Arg Ala Leu Ala Lys His Ile
 180 185 190
 Glu Gly Ile Ser Asp Glu Asp Ile Met Gly Leu Glu Ile Pro Thr Gly
 195 200 205
 Gln Pro Leu Val Tyr Lys Leu Asp Asp Asn Leu Lys Val Ile Glu Lys
 210 215 220
 Phe Tyr Leu
 225
 <210> 156
 <211> 177
 <212> PRT
 <213> Neisseria meningitidis
 <400> 156
 Met Gly Ile Tyr Asp Phe Gln Met Lys Asp Ala Glu Gly Asn Ala Val
 1 5 10 15
 Asp Leu Ser Gly Tyr Arg Gly Lys Val Leu Leu Ile Val Asn Thr Ala
 20 25 30
 Thr Arg Cys Gly Leu Thr Pro Gln Tyr Glu Ala Leu Gln Lys Leu Tyr
 35 40 45
 Ala Gln Tyr Thr Ala Glu Gly Leu Glu Ile Leu Asp Phe Pro Cys Asn
 50 55 60
 Gln Phe Arg Glu Gln Ala Pro Glu Ser Ser Gly Glu Ile Ala Gln Val
 65 70 75 80
 Cys Met Met Lys Phe Gly Thr Lys Phe Lys Ile Phe Asp Lys Ile Glu
 85 90 95
 Val Asn Gly Ala Asn Thr Ala Pro Leu Tyr Ala Tyr Leu Lys Ser Val
 100 105 110
 Lys Pro Gln Asp Lys Gly Asn His Leu Phe Lys Asp Phe Val Leu Lys
 115 120 125

Leu Ala Ala Leu Gly Glu Lys Arg Asp Glu Gly Asp Ile Lys Trp Asn
 130 135 140
 Phe Thr Lys Phe Leu Val Asn Arg Asp Gly Glu Val Val Glu Arg Phe
 145 150 155 160
 Ala Pro Ser Val Thr Pro Glu Glu Ile Glu Ala Asp Ile Arg Ala Leu
 165 170 175

Leu

<210> 157
 <211> 201
 <212> PRT
 <213> Neisseria meningitidis

<400> 157
 Leu Leu Phe Ser Ser Leu Leu Phe Ser Ser Leu Leu Phe Ser Ser Leu
 1 5 10 15
 Leu Phe Ser Ser Ala Ala Gln Ala Ala Ser Glu Asp Ser Ser Arg Ser
 20 25 30
 Pro Tyr Tyr Val Gln Ala Asp Leu Ala Tyr Ala Ala Glu Arg Ile Thr
 35 40 45
 His Asp Tyr Pro Lys Pro Thr Gly Thr Asp Lys Asp Lys Ile Ser Thr
 50 55 60
 Val Ser Asp Tyr Phe Arg Asn Ile Arg Ala His Ser Tyr His Pro Arg
 65 70 75 80
 Val Ser Val Gly Tyr Asp Phe Gly Gly Trp Arg Ile Ala Ala Asp Tyr
 85 90 95
 Ala Ser Tyr Arg Lys Trp Asn Asn Asn Lys Tyr Ser Val Asn Ile Lys
 100 105 110
 Lys Gly Arg Glu Thr Gln Asp Asn Arg Glu Glu Leu Lys Thr Glu Asn
 115 120 125
 Gln Glu Asn Gly Ser Phe His Ala Ala Ser Ser Leu Gly Leu Ser Ala
 130 135 140
 Ile Tyr Asp Phe Lys Leu Asn Asp Lys Phe Asp Lys Phe Lys Pro Tyr
 145 150 155 160
 Ile Gly Ala Arg Val Ala Tyr Gly His Val Lys His Gln Val His Ser
 165 170 175
 Val Glu Thr Lys Thr Thr Ile Val Thr Ser Lys Pro Ala Ala Thr Ser
 180 185 190
 Pro Gln Gly Gly Pro Ile Ile Glu Thr
 195 200

<210> 158
 <211> 368
 <212> PRT
 <213> Neisseria meningitidis

<400> 158

Met Ser Leu Tyr Pro Ile Tyr Asn Phe Ser Ala Gly Pro Ala Val Leu
 1 5 10 210 15
 Pro Glu Ala Val Leu Glu Thr Ala Arg Gln Glu Met Leu Asp Tyr Asn
 20 25 30
 Gly Thr Gly Phe Pro Val Met Ala Met Ser His Arg Ser Glu Met Phe
 35 40 45
 Leu Ser Ile Leu His His Ala Glu Gln Asp Leu Arg Gln Leu Leu Lys
 50 55 60
 Val Pro Asp Asn Tyr Lys Ile Leu Phe Leu Gln Gly Gly Ala Thr Thr
 65 70 75 80
 Gln Phe Asn Met Ala Ala Met Asn Leu Ala His Gly Phe Arg Thr Ala
 85 90 95
 Asp Ala Val Val Thr Gly Asn Trp Ser Arg Ile Ala Tyr Glu Gln Met
 100 105 110
 Ser Arg Leu Thr Asp Thr Glu Ile Arg Leu Ala Ala His Gly Gly Glu
 115 120 125
 Gln Phe Asp Tyr Leu Asp Leu Pro Pro Val Glu Thr Trp Asp Val Ala
 130 135 140
 Pro Asp Ser Ala Phe Val His Phe Ala Val Asn Glu Thr Val Asn Gly
 145 150 155 160
 Leu Gln Tyr Arg Glu Val Pro Cys Leu Ser Glu Gly Met Pro Pro Leu
 165 170 175
 Val Cys Asp Met Ser Ser Glu Ile Leu Ser Arg Glu Phe Asp Val Ala
 180 185 190
 Asp Tyr Gly Leu Ile Tyr Ala Gly Ala Gln Lys Asn Ile Gly Pro Ala
 195 200 205
 Gly Val Thr Val Val Ile Val Arg Glu Asp Leu Leu Glu Arg Cys Pro
 210 215 220
 Asn Asp Ile Pro Asp Val Phe Asn Tyr Arg Ser His Ile Asn Arg Asp
 225 230 235 240
 Gly Met Tyr Asn Thr Pro Ser Thr Tyr Ala Ile Tyr Met Ser Gly Leu
 245 250 255
 Val Phe Arg Trp Leu Gln Ala Gln Gly Gly Val Lys Lys Ile Glu Ala
 260 265 270
 Val Asn Arg Leu Lys Ala Gln Thr Leu Tyr Glu Thr Ile Asp Gly Ser
 275 280 285
 Asp Gly Phe Tyr Ile Asn Arg Ile Arg Pro Asn Ala Arg Ser Lys Met
 290 295 300
 Asn Val Val Phe Gln Thr Gly Asp Glu Glu Leu Asp Arg Arg Phe Val
 305 310 315 320
 Leu Glu Ala Glu Leu Gln Gly Leu Cys Leu Leu Lys Gly Tyr Lys Thr
 325 330 335
 Val Gly Gly Met Arg Ala Ser Ile Tyr Asn Ala Met Pro Leu Glu Gly

340 345 350
 Val Arg Ala Leu Ala Asp Phe Met Arg Asp Phe Gln Arg Arg Tyr Gly
 355 360 365
 <210> 159
 <211> 500
 <212> PRT
 <213> Neisseria meningitidis
 <400> 159
 Met Ser Arg Glu Met Leu Gln Leu Ala Glu Ala Leu Ala Ser Glu Lys
 1 5 10 15
 Asn Val Asp Ala Glu Val Val Phe Gln Ala Leu Glu Phe Ala Leu Ser
 20 25 30
 Thr Ala Ala Lys Lys Lys Ala Asp Arg Glu His Met Asp Val Arg Val
 35 40 45
 Gln Ile Asn Arg Asp Thr Gly Glu Tyr Gln Thr Phe Arg Arg Trp Leu
 50 55 60
 Ile Val Ala Asp Glu Asp Tyr Thr Tyr Pro Asp Val Glu Lys Thr Ile
 65 70 75 80
 Glu Glu Ile Gln Glu Glu Ile Pro Gly Thr Thr Ile Gln Ile Gly Glu
 85 90 95
 Tyr Tyr Glu Glu Gln Leu Pro Asn Glu Gly Phe Gly Arg Gln Ala Ala
 100 105 110
 Gln Thr Ala Lys Gln Ile Ile Leu Gln Arg Ile Arg Asp Ala Glu Arg
 115 120 125
 Glu Gln Asn Leu Asn Glu Phe Leu Ala Val Lys Glu Asp Ile Val Ser
 130 135 140
 Gly Thr Val Lys Arg Val Glu Arg His Gly Ile Ile Val Glu Val Val
 145 150 155 160
 Ala Gly Lys Leu Asp Ala Leu Ile Pro Arg Asp Gln Met Ile Pro Arg
 165 170 175
 Glu Asn Phe Arg Ser Gly Asp Arg Ile Arg Ala Leu Phe Leu Arg Val
 180 185 190
 Glu Glu Ile Gly Asn Thr Gly Arg Lys Gln Val Ile Leu Ser Arg Thr
 195 200 205
 Ser Gly Asp Phe Leu Val Lys Leu Tyr Ala Asn Glu Val Pro Glu Ile
 210 215 220
 Ala Asp Gly Met Leu Glu Ile Arg Ala Val Ala Arg Asp Pro Gly Gln
 225 230 235 240
 Arg Ala Lys Val Ala Val Lys Ala Asn Asp Gln Arg Ile Asp Pro Gln
 245 250 255
 Gly Thr Cys Ile Gly Val Arg Gly Ser Arg Val Asn Ala Val Ser Asn
 260 265 270
 Glu Leu Ser Gly Glu Arg Ile Asp Val Val Leu Trp Ser Pro Glu Pro

275 280 212 285
 Ala Gln Phe Val Met Ser Ala Leu Ser Pro Ala Glu Val Ser Arg Ile
 290 295 300
 Val Ile Asp Glu Asp Lys His Ala Val Asp Val Ile Val Ala Glu Asp
 305 310 315 320
 Gln Leu Ala Leu Ala Ile Gly Arg Gly Gly Gln Asn Val Arg Leu Ala
 325 330 335
 Ser Asp Leu Thr Gly Trp Gln Leu Asn Ile Met Thr Ser Ala Glu Ala
 340 345 350
 Asp Glu Arg Asn Ala Ala Glu Asp Ala Ala Ile Arg Arg Leu Phe Met
 355 360 365
 Asp His Leu Asn Val Asp Glu Glu Thr Ala Asp Val Leu Val Gln Glu
 370 375 380
 Gly Phe Ala Thr Leu Glu Glu Val Ala Tyr Val Pro Ala Ala Glu Leu
 385 390 395 400
 Leu Ala Ile Glu Gly Phe Asp Glu Glu Ile Val Asp Met Leu Arg Asn
 405 410 415
 Arg Ala Arg Asp Ala Ile Leu Thr Met Ala Ile Ala Ala Glu Glu Lys
 420 425 430
 Leu Gly Glu Val Ser Asp Asp Met Arg Asn Leu Glu Gly Ile Asp Ala
 435 440 445
 Asp Met Leu Arg Ser Leu Ala Glu Ala Gly Ile Thr Thr Arg Asp Asp
 450 455 460
 Leu Ala Glu Leu Ala Val Asp Glu Leu Ile Glu Ile Thr Gly Val Asn
 465 470 475 480
 Glu Glu Thr Ala Lys Ala Val Ile Leu Thr Ala Arg Glu His Trp Phe
 485 490 495
 Thr Glu Asp Lys
 500

<210> 160
 <211> 303
 <212> PRT
 <213> Neisseria meningitidis

<400> 160
 Met Val His Ile Met Phe Asn Gln Ala Ala Gln Glu Leu Thr Thr Ile
 1 5 10 15
 Arg Asp Ile Leu Arg Phe Ala Val Ser Arg Phe Asn Glu Ala Gly Leu
 20 25 30
 Phe Phe Gly His Gly Thr Asp Asn Ala His Asp Glu Ala Ala Tyr Leu
 35 40 45
 Ile Leu His Thr Leu Asn Leu Pro Leu Asp Met Leu Ala Pro Tyr Leu
 50 55 60
 Asp Ala Lys Leu Leu Glu Ala Glu Lys Glu Glu Val Leu Ala Val Ile
 65 70 75 80

Glu Arg Arg Ala Val Glu His Ile Pro Ala Ala Tyr Leu Thr His Gln
 85 90 95
 Ala Trp Gln Gly Glu Phe Asp Phe Tyr Val Asp Glu Arg Val Ile Ile
 100 105 110
 Pro Arg Ser Phe Ile Tyr Glu Leu Leu Gly Asp Gly Leu Arg Pro Trp
 115 120 125
 Ile Glu Tyr Asp Glu Leu Val His Asn Ala Leu Asp Leu Cys Thr Gly
 130 135 140
 Ser Gly Cys Leu Ala Ile Gln Met Ala His His Tyr Pro Asp Ala Gln
 145 150 155 160
 Ile Asp Ala Val Asp Val Ser Leu Asp Ala Leu Glu Val Ala Gly Ile
 165 170 175
 Asn Val Glu Asp Tyr Gly Leu Glu Glu Arg Ile Arg Leu Ile His Thr
 180 185
 Asp Leu Phe Glu Gly Leu Glu Gly Thr Tyr Asp Leu Ile Val Ser Asn
 195 200 205
 Pro Pro Tyr Val Asp Ala Glu Ser Val Glu Leu Leu Pro Glu Glu Tyr
 210 215 220
 Leu His Glu Pro Glu Leu Ala Leu Gly Ser Gly Ala Asp Gly Leu Asp
 225 230 235 240
 Ala Thr Arg Gln Ile Leu Leu Asn Ala Ala Lys Phe Leu Asn Pro Lys
 245 250 255
 Gly Val Leu Leu Val Glu Ile Gly His Asn Arg Asp Val Leu Glu Ala
 260 265 270
 Ala Tyr Pro Glu Leu Pro Phe Thr Trp Leu Glu Thr Ser Gly Gly Asp
 275 280 285
 Gly Phe Val Phe Leu Leu Thr Arg Glu Gln Leu Leu Gly Glu Glu
 290 295 300

<210> 161
 <211> 431
 <212> PRT
 <213> Neisseria meningitidis

<400> 161
 Met Leu Asp Ile Gln Leu Leu Arg Ser Asn Thr Ala Ala Val Ala Glu
 1 5 10 15
 Arg Leu Ala Arg Arg Gly Tyr Asp Phe Asp Thr Ala Arg Phe Asp Thr
 20 25 30
 Leu Glu Glu Arg Arg Lys Ser Val Gln Val Lys Thr Glu Glu Leu Gln
 35 40 45
 Ala Ser Arg Asn Ser Ile Ser Lys Gln Ile Gly Ala Leu Lys Gly Gln
 50 55 60
 Gly Lys His Glu Glu Ala Gln Ala Ala Met Asn Gln Val Ala Gln Ile
 65 70 75 80

Lys Thr Asp Leu Glu Gln Ala Ala Ala Asp Leu Asp Ala Val Gln Lys
 85 90 95
 Glu Leu Asp Ala Trp Leu Leu Ser Ile Pro Asn Leu Pro His Glu Ser
 100 105 110
 Val Pro Ala Gly Lys Asp Glu Thr Glu Asn Val Glu Val Arg Lys Val
 115 120 125
 Gly Thr Pro Arg Glu Phe Asp Phe Glu Ile Lys Asp His Val Asp Leu
 130 135 140
 Gly Glu Pro Leu Gly Leu Asp Phe Glu Gly Gly Ala Lys Leu Ser Gly
 145 150 155 160
 Ala Arg Phe Thr Val Met Arg Gly Gln Ile Ala Arg Leu His Arg Ala
 165 170 175
 Leu Ala Gln Phe Met Leu Asp Thr His Thr Leu Gln His Gly Tyr Thr
 180 185 190
 Glu His Tyr Thr Pro Tyr Ile Val Asp Asp Thr Thr Leu Gln Gly Thr
 195 200 205
 Gly Gln Leu Pro Lys Phe Ala Glu Asp Leu Phe His Val Thr Arg Gly
 210 215 220
 Gly Asp Glu Thr Lys Thr Thr Gln Tyr Leu Ile Pro Thr Ala Glu Val
 225 230 235 240
 Thr Leu Thr Asn Thr Val Ala Asp Ser Ile Ile Pro Ser Glu Gln Leu
 245 250 255
 Pro Leu Lys Leu Thr Ala His Ser Pro Cys Phe Arg Ser Glu Ala Gly
 260 265 270
 Ser Tyr Gly Lys Asp Thr Arg Gly Leu Ile Arg Gln His Gln Phe Asp
 275 280 285
 Lys Val Glu Met Val Gln Ile Val His Pro Glu Lys Ser Tyr Glu Thr
 290 295 300
 Leu Glu Glu Met Val Gly His Ala Glu Asn Ile Leu Lys Ala Leu Glu
 305 310 315 320
 Leu Pro Tyr Arg Val Ile Thr Leu Cys Thr Gly Asp Met Gly Phe Gly
 325 330 335
 Ala Ala Lys Thr Tyr Asp Leu Glu Val Trp Val Pro Ala Gln Asn Thr
 340 345 350
 Tyr Arg Glu Ile Ser Ser Cys Ser Asn Cys Glu Asp Phe Gln Ala Arg
 355 360 365
 Arg Leu Lys Ala Arg Phe Lys Asp Glu Asn Gly Lys Asn Arg Leu Val
 370 375 380
 His Thr Leu Asn Gly Ser Gly Leu Ala Val Gly Arg Thr Leu Val Ala
 385 390 395 400
 Val Leu Glu Asn His Gln Asn Ala Asp Gly Ser Ile Asn Ile Pro Ala
 405 410 415
 Ala Leu Gln Pro Tyr Met Gly Gly Val Ala Lys Leu Glu Val Lys

420 215 430
 <210> 162
 <211> 285
 <212> PRT
 <213> Neisseria meningitidis
 <400> 162
 Met Ala Arg His Val Trp Gln Ala Gly Arg Phe Glu Ile Gly Leu Asp
 1 5 10 15
 Lys Pro Lys Ile Met Gly Ile Val Asn Leu Thr Pro Asp Ser Phe Ser
 20 25 30
 Asp Gly Gly Val Tyr Ser Gln Asn Ala Gln Thr Ala Leu Ala His Ala
 35 40 45
 Glu Gln Leu Leu Lys Glu Gly Ala Asp Ile Leu Asp Ile Gly Gly Glu
 50 55 60
 Ser Thr Arg Ser Gly Ala Asp Tyr Val Ser Pro Glu Glu Glu Trp Ala
 65 70 75 80
 Arg Val Glu Pro Val Leu Ala Glu Val Ala Gly Trp Gly Val Pro Ile
 85 90 95
 Ser Leu Asp Thr Arg Arg Thr Val Ile Met Glu Lys Ala Leu Ala Leu
 100 105 110
 Gly Gly Ile Asp Ile Ile Asn Asp Val Ala Ala Leu Asn Asp Glu Gly
 115 120 125
 Ala Val Glu Leu Leu Ala Arg Gln Ala Asp Thr Gly Ile Cys Leu Met
 130 135 140
 His Met Gln Gly Leu Pro Lys Thr Met Gln Ile Asn Pro Lys Tyr Gln
 145 150 155 160
 Asp Val Val Gly Glu Val Ala Arg Tyr Leu Lys Ala Arg Ser Ala Glu
 165 170 175
 Cys Ile Ala Ala Gly Ile Ala Pro Gln Arg Ile Ile Leu Asp Pro Gly
 180 185 190
 Phe Gly Ser Gly Phe Gly Lys Pro Leu Gln His Asn Ile Ala Leu Met
 195 200 205
 Arg His Leu Pro Glu Leu Met Ala Glu Thr Gly Phe Pro Leu Leu Ile
 210 215 220
 Gly Val Ser Arg Lys Ser Thr Ile Gly Glu Leu Thr Gly Glu Ala Asn
 225 230 235 240
 Ala Ala Glu Arg Val His Gly Ser Val Ala Ala Ala Leu Ala Ser Val
 245 250 255
 Ala Arg Gly Ala Gln Ile Val Arg Val His Asp Val Lys Ala Thr Ala
 260 265 270
 Asp Ala Leu Lys Val Trp Glu Ala Leu Gly Ile Asn Leu
 275 280 285
 <210> 163
 <211> 444

<212> PRT
 <213> Neisseria meningitidis

<400> 163
 Met Thr Asp Leu Asn Thr Leu Phe Ala Asn Leu Lys Gln Arg Asn Pro
 1 5 10 15
 Asn Gln Glu Pro Phe His Gln Ala Val Glu Glu Val Phe Met Ser Leu
 20 25 30
 Asp Pro Phe Leu Ala Lys Asn Pro Lys Tyr Thr Gln Gln Ser Leu Leu
 35 40 45
 Glu Arg Ile Val Glu Pro Glu Arg Val Val Met Phe Arg Val Thr Trp
 50 55 60
 Gln Asp Asp Lys Gly Gln Val Gln Val Asn Arg Gly Tyr Arg Val Gln
 65 70 75 80
 Met Ser Ser Ala Ile Gly Pro Tyr Lys Gly Gly Leu Arg Phe His Pro
 85 90 95
 Thr Val Asp Leu Gly Val Leu Lys Phe Leu Ala Phe Glu Gln Val Phe
 100 105 110
 Lys Asn Ala Leu Thr Thr Leu Pro Met Gly Gly Gly Lys Gly Gly Ser
 115 120 125
 Asp Phe Asp Pro Lys Gly Lys Ser Asp Ala Glu Val Met Arg Phe Cys
 130 135 140
 Gln Ala Phe Met Thr Glu Leu Tyr Arg His Ile Gly Ala Asp Thr Asp
 145 150 155 160
 Val Pro Ala Gly Asp Ile Gly Val Gly Gly Arg Glu Ile Gly Tyr Leu
 165 170 175
 Phe Gly Gln Tyr Lys Lys Ile Arg Asn Glu Phe Ser Ser Val Leu Thr
 180 185 190
 Gly Lys Gly Leu Glu Trp Gly Gly Ser Leu Ile Arg Pro Glu Ala Thr
 195 200 205
 Gly Tyr Gly Cys Val Tyr Phe Ala Gln Ala Met Leu Gln Thr Arg Asn
 210 215 220
 Asp Ser Phe Glu Gly Lys Arg Val Leu Ile Ser Gly Ser Gly Asn Val
 225 230 235 240
 Ala Gln Tyr Ala Ala Glu Lys Ala Ile Gln Leu Gly Ala Lys Val Leu
 245 250 255
 Thr Val Ser Asp Ser Asn Gly Phe Val Leu Phe Pro Asp Ser Gly Met
 260 265 270
 Thr Glu Ala Gln Leu Ala Ala Leu Ile Glu Leu Lys Glu Val Arg Arg
 275 280 285
 Glu Arg Val Ala Thr Tyr Ala Lys Glu Gln Gly Leu Gln Tyr Phe Glu
 290 295 300
 Lys Gln Lys Pro Trp Gly Val Ala Ala Glu Ile Ala Leu Pro Cys Ala
 305 310 315 320

Thr Gln Asn Glu Leu Asp Glu Glu Ala Ala Lys Thr Leu Leu Ala Asn
 325 330 335
 Gly Cys Tyr Val Val Ala Glu Gly Ala Asn Met Pro Ser Thr Leu Gly
 340 345 350
 Ala Val Glu Gln Phe Ile Lys Ala Gly Ile Leu Tyr Ala Pro Gly Lys
 355 360 365
 Ala Ser Asn Ala Gly Gly Val Ala Thr Ser Gly Leu Glu Met Ser Gln
 370 375 380
 Asn Ala Ile Arg Leu Ser Trp Thr Arg Glu Glu Val Asp Gln Arg Leu
 385 390 395 400
 Phe Gly Ile Met Gln Ser Ile His Glu Ser Cys Leu Lys Tyr Gly Lys
 405 410 415
 Val Gly Asp Thr Val Asn Tyr Val Asn Gly Ala Asn Ile Ala Gly Phe
 420 425 430
 Val Lys Val Ala Asp Ala Met Leu Ala Gln Gly Phe
 435 440

<210> 164
 <211> 412
 <212> PRT
 <213> Neisseria meningitidis

<400> 164
 Met Ala Phe Tyr Ala Phe Lys Ala Met Arg Ala Ala Ala Leu Ala Ala
 1 5 10 15
 Ala Val Ala Leu Val Leu Ser Ser Cys Gly Lys Gly Gly Asp Ala Ala
 20 25 30
 Gln Gly Gly Gln Pro Ala Gly Arg Glu Ala Pro Ala Pro Val Val Gly
 35 40 45
 Val Val Thr Val His Pro Gln Thr Val Ala Leu Thr Val Glu Leu Pro
 50 55 60
 Gly Arg Leu Glu Ser Leu Arg Thr Ala Asp Val Arg Ala Gln Val Gly
 65 70 75 80
 Gly Ile Ile Gln Lys Arg Leu Phe Gln Glu Gly Ser Tyr Val Arg Ala
 85 90 95
 Gly Gln Pro Leu Tyr Gln Ile Asp Ser Ser Thr Tyr Glu Ala Gly Leu
 100 105 110
 Glu Ser Ala Arg Ala Gln Leu Ala Thr Ala Gln Ala Thr Leu Ala Lys
 115 120 125
 Ala Asp Ala Asp Leu Ala Arg Tyr Lys Pro Leu Val Ala Ala Glu Ala
 130 135 140
 Val Ser Arg Gln Glu Tyr Asp Ala Ala Val Thr Ala Lys Arg Ser Ala
 145 150 155 160
 Glu Ala Gly Val Lys Ala Ala Gln Ala Ala Ile Lys Ser Ala Gly Ile
 165 170 175
 Ser Leu Asn Arg Ser Arg Ile Thr Ala Pro Ile Ser Gly Phe Ile Gly

										218					
			180					185				190			
Gln	Ser	Lys	Val	Ser	Glu	Gly	Thr	Leu	Leu	Asn	Ala	Gly	Asp	Ala	Thr
		195					200					205			
Val	Leu	Ala	Thr	Ile	Arg	Gln	Thr	Asn	Pro	Met	Tyr	Val	Asn	Val	Thr
	210					215					220				
Gln	Ser	Ala	Ser	Glu	Val	Met	Lys	Leu	Arg	Arg	Gln	Ile	Ala	Glu	Gly
225					230					235					240
Lys	Leu	Leu	Ala	Ala	Asp	Gly	Val	Ile	Ala	Val	Gly	Ile	Lys	Phe	Asp
				245					250					255	
Asp	Gly	Thr	Val	Tyr	Pro	Glu	Lys	Gly	Arg	Leu	Leu	Phe	Ala	Asp	Pro
			260					265					270		
Ala	Val	Asn	Glu	Ser	Thr	Gly	Gln	Ile	Thr	Leu	Arg	Ala	Ala	Val	Pro
		275					280					285			
Asn	Asp	Gln	Asn	Ile	Leu	Met	Pro	Gly	Leu	Tyr	Val	Arg	Val	Leu	Met
	290					295					300				
Asp	Gln	Val	Ala	Val	Asp	Asn	Ala	Phe	Val	Val	Pro	Gln	Gln	Ala	Val
305					310					315					320
Thr	Arg	Gly	Ala	Lys	Asp	Thr	Val	Met	Ile	Val	Asn	Ala	Gln	Gly	Gly
				325					330					335	
Met	Glu	Pro	Arg	Glu	Val	Thr	Val	Ala	Gln	Gln	Gln	Gly	Thr	Asn	Trp
			340					345					350		
Ile	Val	Thr	Ser	Gly	Leu	Lys	Asp	Gly	Asp	Lys	Val	Val	Val	Glu	Gly
		355					360					365			
Ile	Ser	Ile	Ala	Gly	Ile	Thr	Gly	Ala	Lys	Lys	Val	Thr	Pro	Lys	Glu
	370					375					380				
Trp	Ala	Ser	Ser	Glu	Asn	Gln	Ala	Ala	Ala	Pro	Gln	Ser	Gly	Val	Gln
385					390					395					400
Thr	Ala	Ser	Glu	Ala	Lys	Pro	Ala	Ser	Glu	Ala	Lys				
				405					410						

<210> 165
 <211> 190
 <212> PRT
 <213> Neisseria meningitidis

<400>	165														
Met	Ile	Met	Ala	Lys	Lys	Ile	Ser	Ile	Leu	Val	Gly	Ser	Leu	Arg	Arg
1				5					10					15	
Ala	Ser	Phe	Ala	Arg	Lys	Val	Ala	Leu	Asn	Ala	Ala	Glu	Met	Phe	Pro
			20					25					30		
Glu	Gly	Trp	Gln	Ala	Glu	Ile	Val	Glu	Ile	Gly	His	Leu	Pro	Leu	Tyr
		35					40					45			
Asn	Phe	Asp	Tyr	Asp	Asp	Pro	Ala	Val	Glu	Asp	Val	Pro	Leu	Pro	Glu
	50					55					60				
Ser	Tyr	Thr	Ala	Phe	Arg	Glu	Thr	Ile	Lys	Ala	Ser	Asp	Gly	Ile	Leu
65					70					75					80

Phe	Val	Thr	Ser	Glu 85	Asn	Asn	Arg	Thr	Ile 90	Pro	Ala	Cys	Leu	Lys 95	Asn
Ala	Val	Asp	Ile 100	Gly	Ser	Lys	Pro	Asn 105	Ala	Asp	Val	Ala	Trp 110	Lys	Asn
Lys	Pro	Ala 115	Gly	Ile	Ile	Ser	His 120	Ser	Val	Gly	Lys	Met 125	Gly	Gly	Tyr
Ser	Ser 130	Gln	Lys	Asn	Leu	Arg 135	Leu	Ala	Leu	Ser	Tyr 140	Phe	Asp	Met	Pro
Val 145	Thr	Gly	Gln	Pro	Glu 150	Val	Phe	Leu	Gly	Asn 155	Ser	Pro	Thr	Leu	Phe 160
Asp	Glu	Asn	Gly	Lys 165	Leu	Ile	Asp	Ser	Ala 170	Arg	Asp	Phe	Val	Gln 175	Ser
Tyr	Ile	Asn	Gln 180	Phe	Val	Gly	Leu	Ile 185	Glu	Arg	Asn	Ala	Lys 190		

```
<210> 166
<211> 199
<212> PRT
<213> Neisseria meningitidis
```

<400> Met 1	Asn	166 Asn	Leu	Ile 5	Lys	Ile	Asn	Leu	Leu 10	Pro	Tyr	Arg	Glu	Glu 15	Met
Asn	Lys	Arg	Lys 20	Gln	Gln	Gln	Phe	Lys 25	Thr	Leu	Met	Tyr	Gly 30	Ala	Val
Leu	Thr	Gly 35	Val	Ala	Ala	Val	Ala 40	Ala	Thr	Tyr	Leu	Phe 45	Ile	Asp	Asn
Met	Ile 50	Asn	Asn	Gln	Ser	Glu 55	Arg	Asn	Thr	Leu	Leu 60	Glu	Thr	Ser	Ile
Ala 65	His	Leu	Asp	Thr	Glu 70	Leu	Ser	Glu	Ile	Gln 75	Lys	Leu	Lys	Gln	Glu 80
Lys	Asp	Ala	Phe	Leu 85	Ile	Lys	Lys	Asn	Lys 90	Ile	Glu	Glu	Leu	Gln 95	Leu
Lys	Arg	Leu	Gln 100	Ala	Ala	Lys	Ile	Leu 105	Asp	Ser	Leu	Asn	Glu 110	Ala	Val
Pro	Gly	Ser 115	Thr	Tyr	Leu	Thr	Ser 120	Leu	Asp	Ala	Val	Thr 125	Ala	Asp	Ser
Tyr	Arg 130	Leu	Ser	Gly	Arg	Thr 135	Ser	Ser	Asp	Asn	Arg 140	Val	Ala	Ala	Met
Met 145	Arg	Ala	Met	Pro	Asn 150	Thr	Gly	Ile	Phe	Lys 155	Gln	Pro	Glu	Leu	Leu 160
Ser	Ile	Lys	Lys	Asn 165	Asn	Ser	His	Gln	Glu 170	Phe	Thr	Leu	Gln	Ala 175	Thr
Leu	Gln	Pro	Ile 180	Val	Lys	Ala	Ala	Glu 185	Ser	Lys	Glu	Asn	Pro 190	Ala	Ser

Gly Asn Ala Gln Glu Ala Asn
195

<210> 167
<211> 215
<212> PRT
<213> Neisseria meningitidis

<400> 167
Met Ala Ser Lys Ser Ser Lys Thr Asn Leu Asp Leu Asn Asn Leu His
1 5 10 15
Leu Leu Asn Leu Pro Ala Arg Leu Phe Ile Ala Leu Leu Ala Val Ala
20 25 30
Ala Val Leu Gly Leu Gly Tyr Ala Gly Leu Phe Lys Ser Gln Met Glu
35 40 45
Ser Leu Glu Glu Tyr Glu Ala Lys Glu Thr Glu Leu Lys Asn Thr Tyr
50 55 60
Lys Gln Lys Ser Ile Asp Ala Ala Ser Leu Asn Asn Leu Arg Asp Glu
65 70 75 80
Leu Ala Ser Ile Arg Ser Ala Phe Asp Ile Met Leu Lys Gln Leu Pro
85 90 95
Thr Asp Ala Glu Ile Pro Asn Leu Val Gln Glu Leu His Gln Ala Gly
100 105 110
Ser Ser Asn Gly Leu Arg Leu Asp Ser Val Met Pro Gln Pro Pro Val
115 120 125
Asp Asp Gly Pro Ile Lys Arg Leu Pro Tyr Ser Ile Ser Ile Thr Gly
130 135 140
Asn Tyr Glu Gln Ile Ser Gln Phe Thr Arg Asp Val Gly Ser Leu Ser
145 150 155 160
Arg Ile Ile Thr Leu Glu Ser Leu Lys Ile Ala Gln Ser Pro Glu Asn
165 170 175
Gly Gly Asn Pro Asp Gly Lys Ser Ser Ile Leu Asn Leu Ser Ala Ile
180 185 190
Ala Thr Thr Tyr Gln Ala Lys Ser Val Glu Glu Leu Ala Ala Glu Ala
195 200 205
Ala Gln Asn Ala Glu Gln Lys
210 215

<210> 168
<211> 181
<212> PRT
<213> Neisseria meningitidis

<400> 168
Met Lys His Tyr Ala Leu Leu Ile Ser Phe Leu Ala Leu Ser Ala Cys
1 5 10 15
Ser Gln Gly Ser Glu Asp Leu Asn Glu Trp Met Ala Gln Thr Arg Arg
20 25 30
Glu Ala Lys Ala Glu Ile Ile Pro Phe Gln Ala Pro Thr Leu Pro Val

35 40 221 45
 Ala Pro Val Tyr Ser Pro Pro Gln Leu Thr Gly Pro Asn Ala Phe Asp
 50 55 60
 Phe Arg Arg Met Glu Thr Asp Lys Lys Gly Glu Asn Ala Pro Asp Thr
 65 70 75 80
 Lys Arg Ile Lys Glu Thr Leu Glu Lys Phe Ser Leu Glu Asn Met Arg
 85 90 95
 Tyr Val Gly Ile Leu Lys Ser Gly Gln Lys Val Ser Gly Phe Ile Glu
 100 105 110
 Ala Glu Gly Tyr Val Tyr Thr Val Gly Val Gly Asn Tyr Leu Gly Gln
 115 120 125
 Asn Tyr Gly Arg Ile Glu Ser Ile Thr Asp Asp Ser Ile Val Leu Asn
 130 135 140
 Glu Leu Ile Glu Asp Ser Thr Gly Asn Trp Val Ser Arg Lys Ala Glu
 145 150 155 160
 Leu Leu Leu Asn Ser Ser Asp Lys Asn Thr Glu Gln Ala Ala Ala Pro
 165 170 175
 Ala Ala Glu Gln Asn
 180

<210> 169
 <211> 769
 <212> PRT
 <213> Neisseria meningitidis

<400> 169
 Met Asn Thr Lys Leu Thr Lys Ile Ile Ser Gly Leu Phe Val Ala Thr
 1 5 10 15
 Ala Ala Phe Gln Thr Ala Ser Ala Gly Asn Ile Thr Asp Ile Lys Val
 20 25 30
 Ser Ser Leu Pro Asn Lys Gln Lys Ile Val Lys Val Ser Phe Asp Lys
 35 40 45
 Glu Ile Val Asn Pro Thr Gly Phe Val Thr Ser Ser Pro Ala Arg Ile
 50 55 60
 Ala Leu Asp Phe Glu Gln Thr Gly Ile Ser Met Asp Gln Gln Val Leu
 65 70 75 80
 Glu Tyr Ala Asp Pro Leu Leu Ser Lys Ile Ser Ala Ala Gln Asn Ser
 85 90 95
 Ser Arg Ala Arg Leu Val Leu Asn Leu Asn Lys Pro Gly Gln Tyr Asn
 100 105 110
 Thr Glu Val Arg Gly Asn Lys Val Trp Ile Phe Ile Asn Glu Ser Asp
 115 120 125
 Asp Thr Val Ser Ala Pro Ala Arg Pro Ala Val Lys Ala Ala Pro Ala
 130 135 140
 Ala Pro Ala Lys Gln Gln Ala Ala Ala Pro Ser Thr Lys Ser Ala Val
 145 150 155 160

Ser Val Ser Glu Pro Phe Thr Pro Ala Lys Gln Gln Ala Ala Ala Pro
 165 170 175
 Phe Thr Glu Ser Val Val Ser Val Ser Ala Pro Phe Ser Pro Ala Lys
 180 185 190
 Gln Gln Ala Ala Ala Ser Ala Lys Gln Gln Ala Ala Ala Pro Ala Lys
 195 200 205
 Gln Gln Ala Ala Ala Pro Ala Lys Gln Gln Ala Ala Ala Pro Ala Lys
 210 215 220
 Gln Thr Asn Ile Asp Phe Arg Lys Asp Gly Lys Asn Ala Gly Ile Ile
 225 230 235 240
 Glu Leu Ala Ala Leu Gly Phe Ala Gly Gln Pro Asp Ile Ser Gln Gln
 245 250 255
 His Asp His Ile Ile Val Thr Leu Lys Asn His Thr Leu Pro Thr Thr
 260 265 270
 Leu Gln Arg Ser Leu Asp Val Ala Asp Phe Lys Thr Pro Val Gln Lys
 275 280 285
 Val Thr Leu Lys Arg Leu Asn Asn Asp Thr Gln Leu Ile Ile Thr Thr
 290 295 300
 Ala Gly Asn Trp Glu Leu Val Asn Lys Ser Ala Ala Pro Gly Tyr Phe
 305 310 315 320
 Thr Phe Gln Val Leu Pro Lys Lys Gln Asn Leu Glu Ser Gly Gly Val
 325 330 335
 Asn Asn Ala Pro Lys Thr Phe Thr Gly Arg Lys Ile Ser Leu Asp Phe
 340 345 350
 Gln Asp Val Glu Ile Arg Thr Ile Leu Gln Ile Leu Ala Lys Glu Ser
 355 360 365
 Gly Met Asn Ile Val Ala Ser Asp Ser Val Asn Gly Lys Met Thr Leu
 370 375 380
 Ser Leu Lys Asp Val Pro Trp Asp Gln Ala Leu Asp Leu Val Met Gln
 385 390 395 400
 Ala Arg Asn Leu Asp Met Arg Gln Gln Gly Asn Ile Val Asn Ile Ala
 405 410 415
 Pro Arg Asp Glu Leu Leu Ala Lys Asp Lys Ala Leu Leu Gln Ala Glu
 420 425 430
 Lys Asp Ile Ala Asp Leu Gly Ala Leu Tyr Ser Gln Asn Phe Gln Leu
 435 440 445
 Lys Tyr Lys Asn Val Glu Glu Phe Arg Ser Ile Leu Arg Leu Asp Asn
 450 455 460
 Ala Asp Thr Thr Gly Asn Arg Asn Thr Leu Ile Ser Gly Arg Gly Ser
 465 470 475 480
 Val Leu Ile Asp Pro Ala Thr Asn Thr Leu Ile Val Thr Asp Thr Arg
 485 490 495

223

Ser Val Ile Glu Lys Phe Arg Lys Leu Ile Asp Glu Leu Asp Val Pro
500 505 510

Ala Gln Gln Val Met Ile Glu Ala Arg Ile Val Glu Ala Ala Asp Gly
515 520 525

Phe Ser Arg Asp Leu Gly Val Lys Phe Gly Ala Thr Gly Lys Lys Lys
530 535 540

Leu Lys Asn Asp Thr Ser Ala Phe Gly Trp Gly Val Asn Ser Gly Phe
545 550 555 560

Gly Gly Asp Asp Lys Trp Gly Ala Glu Thr Lys Ile Asn Leu Pro Ile
565 570 575

Thr Ala Ala Ala Asn Ser Ile Ser Leu Val Arg Ala Ile Ser Ser Gly
580 585 590

Ala Leu Asn Leu Glu Leu Ser Ala Ser Glu Ser Leu Ser Lys Thr Lys
595 600 605

Thr Leu Ala Asn Pro Arg Val Leu Thr Gln Asn Arg Lys Glu Ala Lys
610 615 620

Ile Glu Ser Gly Tyr Glu Ile Pro Phe Thr Val Thr Ser Ile Ala Asn
625 630 635 640

Gly Gly Ser Ser Thr Asn Thr Glu Leu Lys Lys Ala Val Leu Gly Leu
645 650 655

Thr Val Thr Pro Asn Ile Thr Pro Asp Gly Gln Ile Ile Met Thr Val
660 665 670

Lys Ile Asn Lys Asp Ser Pro Ala Gln Cys Ala Ser Gly Asn Gln Thr
675 680 685

Ile Leu Cys Ile Ser Thr Lys Asn Leu Asn Thr Gln Ala Met Val Glu
690 695 700

Asn Gly Gly Thr Leu Ile Val Gly Gly Ile Tyr Glu Glu Asp Asn Gly
705 710 715 720

Asn Thr Leu Thr Lys Val Pro Leu Leu Gly Asp Ile Pro Val Ile Gly
725 730 735

Asn Leu Phe Lys Thr Arg Gly Lys Lys Thr Asp Arg Arg Glu Leu Leu
740 745 750

Ile Phe Ile Thr Pro Arg Ile Met Gly Thr Ala Gly Asn Ser Leu Arg
755 760 765

Tyr

<210> 170
<211> 431
<212> PRT
<213> Neisseria meningitidis

<400> 170
Met Ser Val Ile Gln Asp Leu Gln Ser Arg Gly Leu Ile Ala Gln Thr
1 5 10 15
Thr Asp Ile Glu Ala Leu Asp Ala Leu Leu Asn Glu Gln Lys Ile Ala

20					25					224					30				
Leu	Tyr	Cys ₃₅	Gly	Phe	Asp	Pro	Thr ₄₀	Ala	Asp	Ser	Leu	His ₄₅	Ile	Gly	His				
Leu	Leu ₅₀	Pro	Val	Leu	Ala	Leu ₅₅	Arg	Arg	Phe	Gln ₆₀	Gln	Ala	Gly	His	Thr				
Pro	Ile	Ala	Leu	Val	Gly ₇₀	Gly	Ala	Thr	Gly	Met ₇₅	Ile	Gly	Asp	Pro	Ser ₈₀				
Phe	Lys	Ala	Ala	Glu ₈₅	Arg	Ser	Leu	Asn	Ser ₉₀	Ala	Glu	Thr	Val	Ala	Gly ₉₅				
Trp	Val	Glu	Ser ₁₀₀	Ile	Arg	Asn	Gln	Leu ₁₀₅	Thr	Pro	Phe	Leu	Ser ₁₁₀	Phe	Glu				
Gly	Gly	Asn ₁₁₅	Ala	Ala	Ile	Met	Ala ₁₂₀	Asn	Asn	Ala	Asp	Trp ₁₂₅	Phe	Gly	Ser				
Met	Asn ₁₃₀	Cys	Leu	Asp	Phe	Leu ₁₃₅	Arg	Asp	Ile	Gly	Lys ₁₄₀	His	Phe	Ser	Val				
Asn	Ala	Met	Leu	Asn	Lys ₁₅₀	Glu	Ser	Val	Lys	Gln ₁₅₅	Arg	Ile	Asp	Arg	Asp ₁₆₀				
Gly	Ala	Gly	Ile	Ser ₁₆₅	Phe	Thr	Glu	Phe	Ala ₁₇₀	Tyr	Ser	Leu	Leu	Gln ₁₇₅	Gly				
Tyr	Asp	Phe	Ala ₁₈₀	Glu	Leu	Asn	Lys	Arg ₁₈₅	His	Gly	Ala	Val	Leu ₁₉₀	Glu	Ile				
Gly	Gly	Ser ₁₉₅	Asp	Gln	Trp	Gly	Asn ₂₀₀	Ile	Thr	Ala	Gly	Ile ₂₀₅	Asp	Leu	Thr				
Arg	Arg ₂₁₀	Leu	His	Gln	Lys	Gln ₂₁₅	Val	Phe	Gly	Leu	Thr ₂₂₀	Leu	Pro	Leu	Val				
Thr	Lys	Ser	Asp	Gly	Thr ₂₃₀	Lys	Phe	Gly	Lys	Thr ₂₃₅	Glu	Gly	Gly	Ala	Val ₂₄₀				
Trp	Leu	Asn	Ala	Lys ₂₄₅	Lys	Thr	Ser	Pro	Tyr ₂₅₀	Gln	Phe	Tyr	Gln	Phe ₂₅₅	Trp				
Leu	Lys	Val	Ala ₂₆₀	Asp	Ala	Asp	Val	Tyr ₂₆₅	Lys	Phe	Leu	Lys	Tyr ₂₇₀	Phe	Thr				
Phe	Leu	Ser ₂₇₅	Ile	Glu	Glu	Ile	Asp ₂₈₀	Ala	Ile	Glu	Ala	Lys ₂₈₅	Asp	Lys	Ala				
Ser	Gly ₂₉₀	Ser	Lys	Pro	Glu	Ala ₂₉₅	Gln	Arg	Ile	Leu	Ala ₃₀₀	Glu	Glu	Met	Thr				
Arg	Leu	Ile	His	Gly	Glu ₃₁₀	Glu	Ala	Leu	Ala	Ala ₃₁₅	Ala	Gln	Arg	Ile	Ser ₃₂₀				
Glu	Ser	Leu	Phe	Ala ₃₂₅	Glu	Asp	Gln	Ser	Ser ₃₃₀	Leu	Thr	Glu	Ser	Asp ₃₃₅	Phe				
Glu	Gln	Leu	Ala ₃₄₀	Leu	Asp	Gly	Leu	Pro ₃₄₅	Ala	Phe	Glu	Val	Ser ₃₅₀	Asp	Gly				
Ile	Asn	Val ₃₅₅	Val	Glu	Ala	Leu	Val ₃₆₀	Lys	Thr	Gly	Leu	Ala ₃₆₅	Ser	Ser	Asn				

Lys Glu Ala Arg Gly Phe Val Asn Ser Lys Ala Val Leu Leu Asn Gly
 370 375 380
 Lys Pro Ala Glu Ala Asn Asn Pro Asn His Ala Ala Glu Arg Pro Asp
 385 390 395 400
 Asp Ala Cys Leu Leu Asn Gly Glu His Lys Arg Phe Gly Lys Tyr Thr
 405 410 415
 Ile Leu Arg Arg Gly Lys Arg Asn His Ala Leu Leu Val Trp Lys
 420 425 430

<210> 171
 <211> 363
 <212> PRT
 <213> Neisseria meningitidis

<400> 171
 Met Ser Leu Lys Cys Gly Ile Val Gly Leu Pro Asn Val Gly Lys Ser
 1 5 10 15
 Thr Leu Phe Asn Ala Leu Thr Gln Ser Gly Ile Glu Ala Ala Asn Tyr
 20 25 30
 Pro Phe Cys Thr Ile Glu Pro Asn Val Gly Ile Val Glu Val Pro Asp
 35 40 45
 Pro Arg Met Ala Glu Leu Ala Lys Ile Val Asn Pro Gln Lys Met Gln
 50 55 60
 Pro Ala Ile Val Glu Phe Val Asp Ile Ala Gly Leu Val Ala Gly Ala
 65 70 75 80
 Ser Lys Gly Glu Gly Leu Gly Asn Gln Phe Leu Ala Asn Ile Arg Glu
 85 90 95
 Thr Asp Ala Ile Val Asn Val Val Arg Cys Phe Asp Asp Asp Asn Ile
 100 105 110
 Val His Val Ala Gly Arg Val Asp Pro Ile Ala Asp Ile Glu Thr Ile
 115 120 125
 Gly Thr Glu Leu Ala Leu Ala Asp Leu Ala Ser Val Glu Lys Ala Ile
 130 135 140
 Val Arg Glu Glu Lys Arg Ala Arg Ser Gly Asp Lys Asp Ala Gln Lys
 145 150 155 160
 Leu Val Asp Leu Cys Lys Lys Leu Leu Pro His Leu Asp Glu Gly Lys
 165 170 175
 Pro Val Arg Ser Phe Gly Leu Asp Ala Glu Glu Arg Ala Met Leu Lys
 180 185 190
 Pro Leu Phe Leu Leu Thr Ala Lys Pro Ala Met Tyr Val Gly Asn Val
 195 200 205
 Ala Glu Asp Gly Phe Glu Asn Asn Pro His Leu Asp Arg Leu Lys Glu
 210 215 220
 Leu Ala Ala Lys Glu Asn Ala Pro Val Val Ala Val Cys Ala Ala Met
 225 230 235 240

<400> 173
 Met Ser Thr Pro Ala Leu Leu Val Leu Ala Asp Gly Ser Val Phe His
 1 5 10 15
 Gly Thr Ser Ile Gly Tyr Glu Gly Ser Thr Ser Gly Glu Val Val Phe
 20 25 30
 Asn Thr Ser Met Thr Gly Tyr Gln Glu Ile Leu Thr Asp Pro Ser Tyr
 35 40 45
 Cys Lys Gln Ile Val Thr Leu Thr Tyr Pro His Ile Gly Asn Thr Gly
 50 55 60
 Thr Asn Ala Glu Asp Glu Glu Ser Arg Ser Val Tyr Ala Ala Gly Leu
 65 70 75 80
 Ile Ile Arg Asp Leu Pro Leu Leu His Ser Asn Phe Arg Ala Ser Glu
 85 90 95
 Ser Leu His Asp Tyr Leu Val Arg Asn Lys Thr Val Ala Ile Ala Asp
 100 105 110
 Ile Asp Thr Arg Arg Leu Thr Thr Leu Leu Arg Glu Lys Gly Ala Gln
 115 120 125
 Gly Gly Ala Ile Leu Thr Gly Ala Asp Ala Thr Ile Glu Lys Ala Gln
 130 135 140
 Glu Leu Ile Ala Ala Phe Gly Ser Met Val Gly Lys Asp Leu Ala Lys
 145 150 155 160
 Glu Val Ser Cys Thr Glu Thr Tyr Glu Trp Thr Glu Gly Glu Trp Ala
 165 170 175
 Leu Gly Lys Gly Phe Val Thr Pro Asp Glu Gln Pro Tyr His Val Val
 180 185 190
 Ala Tyr Asp Phe Gly Val Lys Thr Asn Ile Leu Arg Met Leu Ala Ser
 195 200 205
 Arg Gly Cys Arg Leu Thr Val Val Pro Ala Gln Thr Ser Ala Glu Asp
 210 215 220
 Val Leu Ala Leu Asn Pro Asp Gly Val Phe Leu Ser Asn Gly Pro Gly
 225 230 235 240
 Asp Pro Glu Pro Cys Thr Tyr Ala Ile Lys Ala Val Gln Lys Leu Ile
 245 250 255
 Glu Ser Gly Lys Pro Ile Phe Gly Ile Cys Leu Gly His Gln Leu Ile
 260 265 270
 Ser Leu Ala Ile Gly Ala Lys Thr Leu Lys Met Arg Phe Ser His His
 275 280 285
 Gly Ala Asn His Pro Val Gln Asp Leu Asp Ser Gly Lys Val Val Ile
 290 295 300
 Thr Ser Gln Asn His Gly Phe Ala Val Asp Ala Asp Thr Leu Pro Ala
 305 310 315 320
 Asn Ala Arg Ile Thr His Lys Ser Leu Phe Asp Asn Thr Leu Gln Gly
 325 330 335

Ile Glu Leu Thr Asp Lys Pro Val Phe Cys Phe Gln Gly His Pro Glu
340 345 350

Ala Ser Pro Gly Pro Gln Asp Val Gly Tyr Leu Phe Asp Lys Phe Ile
355 360 365

Gly Asn Met Lys Ala Ala Lys Arg Ala
370 375

<210> 174

<211> 213

<212> PRT

<213> Neisseria meningitidis

<400> 174

Met Ser Ile Pro Ile Asn Phe Asn Asn Leu Lys Tyr Leu Leu Asn Asp
1 5 10 15

Met Arg Asn Lys Asn Arg Ile Ile Glu Ala Phe Pro Phe Asn Tyr Asn
20 25 30

Gln Arg Gln Tyr Ala Val Ile Leu Thr Arg Tyr Lys Pro Asp Glu Pro
35 40 45

Arg Pro Asp Asp Tyr Ala Gln Ala Lys Leu Glu Phe Phe Asn Leu Asn
50 55 60

Ser Glu Asn Ser Ile Phe Ala Tyr Ala Asp Phe Tyr Glu Val His Phe
65 70 75 80

Lys Ser Ala Thr Asp Phe Ile Asn Phe Phe Lys Ile Asn Val Gln Ala
85 90 95

Gly Ala Ala Lys Ile Arg Glu Ile Phe Gln Ser Phe Ser Asn Leu Phe
100 105 110

Ala Asp Phe Ile Pro Thr Gln Thr Lys Lys Asp Leu Asp Ile Ile Tyr
115 120 125

Lys Lys Ile Val Ala Thr Arg Leu Glu Pro Asn Ser Pro Asn Thr Ile
130 135 140

Tyr Cys Tyr Asp Val Arg Arg Asn Gly Lys Asp Lys Ala Gly Lys Pro
145 150 155 160

Asn Arg Arg Ser Val Glu Asn Ser Glu Lys Ala Lys Ile Leu Arg Pro
165 170 175

Glu Leu Tyr Glu Lys Phe Lys Ala Asp Ser Asn Tyr Ser Phe Phe Phe
180 185 190

Ser Asp Asn Pro Ser Asp Glu Lys Thr Asp Ala Glu Ile Ile Arg Glu
195 200 205

Val Thr Asn Arg Gln
210

<210> 175

<211> 1071

<212> PRT

<213> Neisseria meningitidis

<400> 175

229

Met Pro Lys Arg Thr Asp Leu Lys Ser Ile Leu Ile Ile Gly Ala Gly
1 5 10 15

Pro Ile Val Ile Gly Gln Ala Cys Glu Phe Asp Tyr Ser Gly Ala Gln
20 25 30

Ala Cys Lys Ala Leu Arg Glu Glu Gly Tyr Lys Val Ile Leu Val Asn
35 40 45

Ser Asn Pro Ala Thr Ile Met Thr Asp Pro Glu Met Ala Asp Val Thr
50 55 60

Tyr Ile Glu Pro Ile Met Trp Gln Thr Val Glu Lys Ile Ile Ala Lys
65 70 75 80

Glu Arg Pro Asp Ala Ile Leu Pro Thr Met Gly Gly Gln Thr Ala Leu
85 90 95

Asn Cys Ala Leu Asp Leu Ala Arg Asn Gly Val Leu Ala Lys Tyr Asn
100 105 110

Val Glu Leu Ile Gly Ala Thr Glu Asp Ala Ile Asp Lys Ala Glu Asp
115 120 125

Arg Gly Arg Phe Lys Glu Ala Met Glu Lys Ile Gly Leu Ser Cys Pro
130 135 140

Lys Ser Phe Val Cys His Thr Met Asn Glu Ala Leu Ala Ala Gln Glu
145 150 155 160

Gln Val Gly Phe Pro Thr Leu Ile Arg Pro Ser Phe Thr Met Gly Gly
165 170 175

Ser Gly Gly Gly Ile Ala Tyr Asn Lys Asp Glu Phe Leu Ala Ile Cys
180 185 190

Glu Arg Gly Phe Asp Ala Ser Pro Thr His Glu Leu Leu Ile Glu Gln
195 200 205

Ser Val Leu Gly Trp Lys Glu Tyr Glu Met Glu Val Val Arg Asp Lys
210 215 220

Asn Asp Asn Cys Ile Ile Ile Cys Ser Ile Glu Asn Phe Asp Pro Met
225 230 235 240

Gly Val His Thr Gly Asp Ser Ile Thr Val Ala Pro Ala Gln Thr Leu
245 250 255

Thr Asp Lys Glu Tyr Gln Ile Met Arg Asn Ala Ser Leu Ala Val Leu
260 265 270

Arg Glu Ile Gly Val Asp Thr Gly Gly Ser Asn Val Gln Phe Ala Val
275 280 285

Asn Pro Ala Asn Gly Glu Met Ile Val Ile Glu Met Asn Pro Arg Val
290 295 300

Ser Arg Ser Ser Ala Leu Ala Ser Lys Ala Thr Gly Phe Pro Ile Ala
305 310 315 320

Lys Val Ala Ala Lys Leu Ala Val Gly Phe Thr Leu Asp Glu Leu Arg
325 330 335

Asn Asp Ile Thr Gly Gly Lys Thr Pro Ala Ser Phe Glu Pro Ser Ile

										230						
			340					345				350				
Asp	Tyr	Val	Val	Thr	Lys	Ile	Pro	Arg	Phe	Ala	Phe	Glu	Lys	Phe	Pro	
		355					360					365				
Ala	Ala	Asp	Asp	Arg	Leu	Thr	Thr	Gln	Met	Lys	Ser	Val	Gly	Glu	Val	
	370					375					380					
Met	Ala	Met	Gly	Arg	Thr	Ile	Gln	Glu	Ser	Phe	Gln	Lys	Ala	Leu	Arg	
385					390					395					400	
Gly	Leu	Glu	Thr	Gly	Leu	Cys	Gly	Phe	Asn	Pro	Arg	Ser	Glu	Asp	Lys	
				405					410					415		
Ala	Glu	Ile	Arg	Arg	Glu	Leu	Ala	Asn	Pro	Gly	Pro	Glu	Arg	Met	Leu	
			420					425					430			
Phe	Val	Ala	Asp	Ala	Phe	Arg	Ala	Gly	Phe	Thr	Leu	Glu	Glu	Ile	His	
		435					440					445				
Glu	Ile	Cys	Ala	Ile	Asp	Pro	Trp	Phe	Leu	Ala	Gln	Ile	Glu	Asp	Leu	
	450					455					460					
Met	Lys	Glu	Glu	Lys	Ala	Val	Ser	Asp	Gly	Ile	Leu	Ser	Asp	Leu	Asp	
465					470					475					480	
Phe	Ala	Ala	Leu	Arg	Arg	Leu	Lys	Arg	Lys	Gly	Phe	Ser	Asp	Lys	Arg	
				485					490					495		
Leu	Ala	Gln	Leu	Leu	Asn	Val	Ser	Glu	Lys	Glu	Val	Arg	Glu	His	Arg	
			500					505					510			
Tyr	Ala	Leu	Lys	Leu	His	Pro	Val	Tyr	Lys	Arg	Val	Asp	Thr	Cys	Ala	
		515					520					525				
Ala	Glu	Phe	Ala	Thr	Glu	Thr	Ala	Tyr	Leu	Tyr	Ser	Thr	Tyr	Glu	Glu	
	530					535					540					
Glu	Cys	Glu	Ser	Arg	Pro	Ser	Asp	Arg	Lys	Lys	Val	Met	Ile	Leu	Gly	
545					550					555					560	
Gly	Gly	Pro	Asn	Arg	Ile	Gly	Gln	Gly	Ile	Glu	Phe	Asp	Tyr	Cys	Cys	
				565					570					575		
Val	His	Ala	Ala	Leu	Ala	Leu	Arg	Glu	Ser	Gly	Phe	Glu	Thr	Ile	Met	
			580					585					590			
Val	Asn	Cys	Asn	Pro	Glu	Thr	Val	Ser	Thr	Asp	Phe	Asp	Thr	Ser	Asp	
		595					600					605				
Arg	Leu	Tyr	Phe	Glu	Pro	Leu	Thr	Leu	Glu	Asp	Val	Leu	Glu	Ile	Val	
	610					615					620					
Arg	Thr	Glu	Asn	Pro	Trp	Gly	Val	Ile	Val	His	Tyr	Gly	Gly	Gln	Thr	
625					630					635					640	
Pro	Leu	Lys	Leu	Ala	Asn	Ala	Leu	Val	Glu	Asn	Gly	Val	Asn	Ile	Ile	
				645					650					655		
Gly	Thr	Ser	Ala	Asp	Ser	Ile	Asp	Ala	Ala	Glu	Asp	Arg	Glu	Arg	Phe	
			660					665					670			
Gln	Lys	Val	Leu	Asn	Asp	Leu	Gly	Leu	Arg	Gln	Pro	Pro	Asn	Arg	Ile	
		675					680					685				

Ala His Asn Glu Glu Glu Ala Leu Val Lys Ala Glu Glu Ile Gly Tyr
 690 695 700
 Pro Leu Val Val Arg Pro Ser Tyr Val Leu Gly Gly Arg Ala Met Gln
 705 710 715 720
 Val Val His Ser Ala Glu Glu Leu Gln Lys Tyr Met Arg Glu Ala Val
 725 730 735
 Gln Val Ser Glu Asp Ser Pro Val Leu Leu Asp Phe Phe Leu Asn Asn
 740 745 750
 Ala Ile Glu Val Asp Val Asp Cys Val Ser Asp Gly Lys Asp Val Val
 755 760 765
 Ile Gly Gly Ile Met Gln His Val Glu Gln Ala Gly Ile His Ser Gly
 770 775 780
 Asp Ser Gly Cys Ser Leu Pro Pro Tyr Ser Leu Ser Glu Glu Ile Gln
 785 790 795 800
 Asp Glu Ile Arg Arg Gln Thr Lys Ala Met Ala Tyr Ala Leu Gly Val
 805 810 815
 Val Gly Leu Met Asn Val Gln Phe Ala Val Gln Asp Gly Val Val Phe
 820 825 830
 Val Leu Glu Val Asn Pro Arg Ala Ser Arg Thr Val Pro Phe Val Ser
 835 840 845
 Lys Ala Thr Gly Val Pro Leu Ala Lys Val Gly Ala Arg Cys Met Ala
 850 855 860
 Gly Ile Ser Leu Lys Glu Gln Gly Val Glu Lys Glu Val Val Pro Asp
 865 870 875 880
 Phe Tyr Ala Val Lys Glu Ala Val Phe Pro Phe Ile Lys Phe Pro Gly
 885 890 895
 Val Asp Thr Ile Leu Gly Pro Glu Met Arg Ser Thr Gly Glu Val Met
 900 905 910
 Gly Val Gly Ala Ser Phe Gly Glu Ala Tyr Tyr Lys Ala Gln Leu Gly
 915 920 925
 Ala Gly Glu Arg Leu Asn Pro Thr Gly Lys Ile Phe Leu Ser Val Arg
 930 935 940
 Glu Glu Asp Lys Glu Arg Val Ile Lys Thr Ala Lys Asn Phe Gln Val
 945 950 955 960
 Leu Gly Tyr Gly Ile Cys Ala Thr Arg Gly Thr Ala Gln Tyr Leu Thr
 965 970 975
 Glu His Gly Leu Ile Val Gln Thr Ile Asn Lys Val Pro Glu Gly Arg
 980 985 990
 Pro His Ile Gly Asp Ala Leu Lys Asn Gly Glu Ile Ala Leu Val Val
 995 1000 1005
 Asn Thr Val Ser Ser Asp Pro Gln Ser Val Ser Asp Ser His Ile Ile
 1010 1015 1020

Arg Gln Ser Ala Leu Gln Gln Arg Val Pro Gln Tyr Thr Thr Thr Ala
 1025 1030 232 1035 1040
 Gly Gly Glu Ala Met Ser Glu Gly Ala Lys Ser Arg Asp His Leu Gly
 1045 1050 1055
 Val Tyr Ser Val Gln Glu Leu His Gly Arg Leu Lys Asn Arg Asn
 1060 1065 1070
 <210> 176
 <211> 346
 <212> PRT
 <213> Neisseria meningitidis
 <400> 176
 Met Asp Ile Ser Asp Phe Asp Phe Thr Leu Pro Glu Lys Leu Ile Ala
 1 5 10 15
 Gln His Pro Pro Glu Val Arg Gly Ser Ser Arg Leu Leu Val Ala Leu
 20 25 30
 Pro Asp Met Pro Leu Gln Asp Arg Val Phe Gly Asp Leu Pro Asp Tyr
 35 40 45
 Val Glu Ala Gly Asp Val Leu Val Phe Asn Asn Thr Lys Val Met Lys
 50 55 60
 Ala Arg Leu Phe Gly Gln Lys Asp Ser Gly Gly Arg Ile Glu Ala Leu
 65 70 75 80
 Ile Glu Arg Val Leu Asp Asn His Thr Ala Leu Ala His Ile Arg Ser
 85 90 95
 Ser Lys Ser Pro Lys Pro Gly Met Gly Leu Val Phe Glu Gly Gly Ile
 100 105 110
 Arg Ala Val Thr Val Gly Arg Glu Gly Glu Leu Phe Cys Leu Arg Phe
 115 120 125
 Glu Gly Gly Glu Thr Val Tyr Glu Leu Leu Glu Gln Asn Gly His Leu
 130 135 140
 Pro Leu Pro Pro Tyr Ile Glu Arg Ala Ala Asp Ala Asp Asp Asp Ser
 145 150 155 160
 Arg Tyr Gln Thr Val Tyr Ala Lys Tyr Gln Gly Ala Val Ala Ala Pro
 165 170 175
 Thr Ala Gly Leu His Phe Thr Glu Glu Leu Leu His Arg Leu Lys Asp
 180 185 190
 Lys Gly Ala Val Thr Ala Glu Val Thr Leu His Val Gly Ala Gly Thr
 195 200 205
 Phe Gln Pro Val Arg Val Asp Lys Ile Glu Glu His Lys Met His Ser
 210 215 220
 Glu Trp Phe Glu Val Pro Ser Glu Thr Ala Ala Ala Val Glu Ala Ala
 225 230 235 240
 Lys Ala Arg Gly Asn Lys Val Trp Ala Val Gly Thr Thr Ser Met Arg
 245 250 255
 Ala Leu Glu Ser Ala Ala Arg Ala Thr Gly Arg Leu Lys Ala Gly Gln

260 265 270 233
 Gly Asp Thr Asp Ile Phe Ile Thr Pro Gly Tyr Arg Phe Asn Val Val
 275 280 285
 Asp Arg Leu Val Thr Asn Phe His Leu Pro Lys Ser Thr Leu Leu Met
 290 295 300
 Leu Val Ser Ala Phe Ser Gly Met Gly His Ile Arg Ala Ala Tyr Arg
 305 310 315 320
 His Ala Val Glu Arg Glu Tyr Arg Phe Phe Ser Tyr Gly Asp Ala Met
 325 330 335
 Val Leu Gly Arg Asn Glu Gly Val Val Arg
 340 345
 <210> 177
 <211> 453
 <212> PRT
 <213> Neisseria meningitidis
 <400> 177
 Met Leu Lys Lys Val Leu Ile Ala Asn Arg Gly Glu Ile Ala Leu Arg
 1 5 10 15
 Val Leu Arg Ala Cys Arg Glu Met Gly Ile Ala Thr Val Ala Val His
 20 25 30
 Ser Glu Ala Asp Lys Asp Ser Leu His Val Lys Leu Ala Asp Glu Ser
 35 40 45
 Val Cys Ile Gly Pro Ala Ala Ser Ala Gln Ser Tyr Leu Asn Val Pro
 50 55 60
 Ala Ile Ile Ala Ala Ala Glu Val Ser Cys Ala Asp Ala Val His Pro
 65 70 75 80
 Gly Tyr Gly Phe Leu Ala Glu Asn Ala Asp Phe Ala Glu Gln Val Glu
 85 90 95
 Gln Ser Gly Phe Thr Phe Ile Gly Pro Lys Pro Asp Thr Ile Arg Leu
 100 105 110
 Met Gly Asp Lys Val Ser Ala Lys His Ala Met Ile Ala Ala Gly Val
 115 120 125
 Pro Cys Val Pro Gly Ser Asp Gly Ala Leu Pro Asp Asp Gly Glu Glu
 130 135 140
 Ile Leu Lys Ile Ala Asp Lys Val Gly Tyr Pro Val Ile Ile Lys Ala
 145 150 155 160
 Ser Gly Gly Gly Gly Arg Gly Met Arg Val Val Glu Lys Lys Glu
 165 170 175
 Asp Leu Leu Gln Ser Val Glu Met Thr Lys Ala Glu Ala Gly Ala Ala
 180 185 190
 Phe Gly Asn Pro Met Val Tyr Met Glu Arg Tyr Leu Gln Arg Pro Arg
 195 200 205
 His Val Glu Ile Gln Val Ile Ala Asp Glu His Gly Asn Ala Ile Tyr
 210 215 220

Leu Ala Glu Arg Asp Cys Ser Leu Gln Arg Arg His Gln Lys Val Ile
 225 230 235 240
 Glu Glu Ala Pro Ala Pro Phe Ile Thr Glu Lys Glu Arg Ala Lys Ile
 245 250 255
 Gly Asn Ala Cys Ala Asp Ala Cys Lys Arg Ile Gly Tyr Arg Gly Ala
 260 265 270
 Gly Thr Phe Glu Phe Leu Tyr Glu Asp Gly Glu Phe Phe Phe Ile Glu
 275 280 285
 Met Asn Thr Arg Val Gln Val Glu His Pro Val Thr Glu Leu Ile Thr
 290 295 300
 Gly Val Asp Ile Val Gln Glu Gln Leu Arg Ile Ala Ala Gly Leu Pro
 305 310 315 320
 Leu Gln Tyr Lys Gln Lys Asp Ile Gln Val Glu Gly His Ala Phe Glu
 325 330 335
 Cys Arg Ile Asn Ala Glu Asp Pro Tyr Asn Phe Ile Pro Ser Pro Gly
 340 345 350
 Leu Ile Glu Ser Cys His Leu Pro Gly Gly Phe Gly Ile Arg Val Asp
 355 360 365
 Ser His Ile Tyr Gln Gly Tyr Arg Ile Pro Pro Tyr Tyr Asp Ser Leu
 370 375 380
 Ile Gly Lys Ile Cys Val His Gly Lys Thr Arg Glu Gln Ala Met Ala
 385 390 395 400
 Lys Met Arg Val Ala Leu Ala Glu Leu Ala Val Thr Gly Ile Lys Thr
 405 410 415
 Asn Thr Pro Leu His Arg Asp Leu Phe Ala Asp Ala Gly Phe Gln Lys
 420 425 430
 Gly Gly Val Ser Ile His Tyr Leu Glu His Trp Leu Glu Asp Arg Lys
 435 440 445
 Ala Lys Gln Asp Lys
 450

<210> 178
 <211> 295
 <212> PRT
 <213> Neisseria meningitidis

<400> 178
 Met Pro Tyr Gln Gln Ile Thr Val Asn Val Asn Asp Ala Val Ala Glu
 1 5 10 15
 Arg Leu Ala Asp Ala Leu Met Glu His Gly Ala Leu Ser Ala Ala Ile
 20 25 30
 Glu Asp Ala Tyr Ala Gly Thr Gln Asn Glu Gln Ala Ile Phe Gly Glu
 35 40 45
 Pro Gly Met Pro Ala Glu Gln Ile Trp Gln Gln Ser Lys Val Ile Ala
 50 55 60

Leu Phe Gly Glu His Asp Glu Ala Ala Ala Ile Ile Gln Thr Ala Thr
 65 70 75 80
 Gln Glu Cys Gly Leu Lys Asp Leu Ala Tyr Thr Gly Glu Thr Ile Glu
 85 90 95
 Asp Gln Asp Trp Val Arg Leu Thr Gln Ser Gln Phe Asp Pro Ile Arg
 100 105 110
 Ile Ser Asp Arg Leu Trp Ile Thr Pro Ser Trp His Glu Val Pro Glu
 115 120 125
 Gly Ser Ala Val Asn Leu Arg Leu Asp Pro Gly Leu Ala Phe Gly Thr
 130 135 140
 Gly Ser His Pro Thr Thr Arg Leu Cys Leu Lys Trp Leu Asp Thr Gln
 145 150 155 160
 Leu Lys Asn Gly Glu Ser Val Leu Asp Tyr Gly Cys Gly Ser Gly Ile
 165 170 175
 Leu Thr Ile Ala Ala Leu Lys Leu Gly Ala Gly Phe Ala Val Gly Val
 180 185 190
 Asp Ile Asp Glu Gln Ala Val Arg Ala Gly Lys Asp Asn Ala Ala Gln
 195 200 205
 Asn Asn Val Asp Ala Gln Phe Phe Leu Pro Asp Gly Leu Pro Gln Gly
 210 215 220
 Gln Phe Asp Val Val Val Ala Asn Ile Leu Ala Asn Pro Leu Arg Met
 225 230 235 240
 Leu Gly Glu Met Leu Ala Ala Arg Thr Lys Gln Gly Gly Arg Ile Val
 245 250 255
 Leu Ser Gly Leu Leu Asp Glu Gln Ala Glu Glu Leu Gly Gly Ile Tyr
 260 265 270
 Ser Gln Trp Phe Asp Leu Asp Pro Ala Glu Thr Glu Glu Gly Trp Ala
 275 280 285
 Arg Leu Ser Gly Val Lys Arg
 290 295

<210> 179
 <211> 427
 <212> PRT
 <213> Neisseria meningitidis

<400> 179
 Met Asn Arg Asn Glu Ile Leu Phe Asp Arg Ala Lys Ala Ile Ile Pro
 1 5 10 15
 Gly Gly Val Asn Ser Pro Val Arg Ala Phe Gly Ser Val Gly Gly Val
 20 25 30
 Pro Arg Phe Ile Lys Lys Ala Glu Gly Ala Tyr Val Trp Asp Glu Asn
 35 40 45
 Gly Thr Arg Tyr Thr Asp Tyr Val Gly Ser Trp Gly Pro Ala Ile Val
 50 55 60
 Gly His Ala His Pro Glu Val Val Glu Thr Val Cys Glu Ala Ala Leu

65		70		236		80									
				75											
Gly	Gly	Leu	Ser	Phe	Gly	Ala	Pro	Thr	Glu	Gly	Glu	Ile	Val	Ile	Ala
				85					90					95	
Glu	Glu	Ile	Ala	Lys	Ile	Met	Pro	Ser	Val	Glu	Arg	Leu	Arg	Leu	Val
			100					105					110		
Ser	Ser	Gly	Thr	Glu	Ala	Thr	Met	Thr	Ala	Ile	Arg	Leu	Ala	Arg	Gly
		115					120					125			
Phe	Thr	Gly	Arg	Asp	Lys	Ile	Ile	Lys	Phe	Glu	Gly	Cys	Tyr	His	Gly
	130					135					140				
His	Ser	Asp	Ser	Leu	Leu	Val	Lys	Ala	Gly	Ser	Gly	Leu	Leu	Thr	Phe
145					150					155					160
Gly	Asn	Pro	Ser	Ser	Ala	Gly	Val	Pro	Ala	Asp	Phe	Thr	Lys	His	Thr
				165					170					175	
Leu	Val	Leu	Glu	Tyr	Asn	Asn	Ile	Ala	Gln	Leu	Glu	Glu	Ala	Phe	Ala
			180					185					190		
Gln	Ser	Gly	Asn	Glu	Ile	Ala	Cys	Val	Ile	Val	Glu	Pro	Phe	Val	Gly
		195					200					205			
Asn	Met	Asn	Leu	Val	Arg	Pro	Thr	Glu	Ala	Phe	Val	Lys	Ala	Leu	Arg
	210					215					220				
Gly	Leu	Thr	Glu	Lys	Tyr	Gly	Ala	Val	Leu	Ile	Tyr	Asp	Glu	Val	Met
225					230					235					240
Thr	Gly	Phe	Arg	Val	Ala	Leu	Gly	Gly	Ala	Gln	Ser	Leu	His	Gly	Ile
				245					250					255	
Thr	Pro	Asp	Leu	Thr	Thr	Met	Gly	Lys	Val	Ile	Gly	Gly	Gly	Met	Pro
			260					265					270		
Leu	Ala	Ala	Phe	Gly	Gly	Arg	Lys	Asp	Ile	Met	Glu	Cys	Ile	Ser	Pro
		275					280					285			
Leu	Gly	Gly	Val	Tyr	Gln	Ala	Gly	Thr	Leu	Ser	Gly	Asn	Pro	Ile	Ala
	290					295					300				
Val	Ala	Ala	Gly	Leu	Lys	Thr	Leu	Glu	Ile	Ile	Gln	Arg	Glu	Gly	Phe
305					310					315					320
Tyr	Glu	Asn	Leu	Thr	Ala	Arg	Thr	Glu	Gln	Leu	Val	Gln	Gly	Phe	Arg
				325					330					335	
Thr	Ala	Ala	Asp	Ala	Ala	Gly	Ile	Glu	Phe	Thr	Ala	Asp	Ser	Val	Gly
			340					345					350		
Gly	Met	Phe	Gly	Leu	Tyr	Phe	Ala	Ala	His	Ala	Pro	Arg	Asn	Tyr	Ala
		355					360					365			
Asp	Met	Ala	Arg	Ser	Asn	Ile	Glu	Gly	Phe	Lys	Gln	Phe	Phe	His	Gly
	370					375					380				
Met	Leu	Asp	Arg	Asn	Val	Ala	Phe	Gly	Pro	Ser	Ala	Tyr	Glu	Ala	Gly
385					390					395					400
Phe	Val	Ser	Ala	Ala	His	Thr	Pro	Glu	Leu	Ile	Asp	Glu	Thr	Val	Ala
				405					410					415	

Val Ala Val Glu Val Phe Lys Ala Met Ala Glu
420 425

<210> 180
<211> 518
<212> PRT
<213> Neisseria meningitidis

<400> 180
Met Thr Leu Ala Glu Phe Trp Pro Leu Cys Leu Arg Arg Leu His Asp
1 5 10 15
Met Leu Pro Gln Gly Gln Phe Ala Gln Trp Ile Ala Pro Leu Thr Val
20 25 30
Gly Glu Glu Gly Gly Val Trp Val Val Tyr Gly Lys Asn Gln Phe Ala
35 40 45
Cys Asn Met Leu Lys Ser Gln Phe Ala Gly Lys Ile Glu Ala Val Arg
50 55 60
Glu Glu Leu Ala Ala Gly Arg Ser Ala Phe Val Phe Lys Pro Gly Glu
65 70 75 80
Gly Val Arg Tyr Glu Met Ala Ala Val Glu Gly Ala Val Glu Pro Ala
85 90 95
Glu Pro Ser Leu His Ala Val Ser Glu Gly Met Pro Val Gln Glu Val
100 105 110
Leu Leu Asp Glu Leu Pro Ser Glu Glu Pro Val Lys Pro Ala Ala Ser
115 120 125
Lys Thr Ala Ala Asp Ile Leu Ala Glu Arg Met Lys Asn Leu Pro His
130 135 140
Glu Pro Arg Gln Ala Ala Gly Ser Ala Ser Arg Pro Glu Ser Val Ala
145 150 155 160
Val Ala Lys Ala Arg Thr Asp Val Gln Arg Asp Ala Glu Glu Ala Arg
165 170 175
Tyr Glu Gln Thr Asn Leu Ser Pro Asp Tyr Thr Phe Asp Thr Leu Val
180 185 190
Glu Gly Lys Gly Asn Arg Leu Ala Ala Ala Ala Gln Ala Ile Ala
195 200 205
Glu Ser Pro Gly Gln Ser Tyr Asn Pro Phe Phe Leu Tyr Gly Ser Thr
210 215 220
Gly Leu Gly Lys Thr His Leu Val Gln Ala Val Gly Asn Glu Leu Leu
225 230 235 240
Lys Asn Arg Pro Asp Ala Lys Val Arg Tyr Met His Ser Asp Asp Tyr
245 250 255
Ile Arg Ser Phe Met Lys Ala Val Arg Asn Asn Thr Tyr Asp Val Phe
260 265 270
Lys Gln Gln Tyr Lys Gln Tyr Asp Leu Leu Ile Ile Asp Asp Ile Gln
275 280 285

Phe Ile Lys Gly Lys Asp Arg Thr Met Glu Glu²³⁸ Phe Phe Tyr Leu Tyr
 290 295 300
 Asn His Phe His Asn Glu Lys Lys Gln Leu Ile Leu Thr Cys Asp Val
 305 310 315 320
 Leu Pro Ala Lys Ile Glu Gly Met Asp Asp Arg Leu Lys Ser Arg Phe
 325 330 335
 Ser Trp Gly Leu Thr Leu Glu Leu Glu Pro Pro Glu Leu Glu Met Arg
 340 345 350
 Ile Ala Ile Leu Gln Lys Lys Ala Glu Ala Ala Gly Ile Ser Ile Glu
 355 360 365
 Asp Glu Ala Ala Leu Phe Ile Ala Asn Leu Ile Arg Ser Asn Val Arg
 370 375 380
 Glu Leu Glu Gly Ala Phe Asn Arg Val Gly Ala Ser Ser Arg Phe Met
 385 390 395 400
 Asn Arg Pro Val Ile Asp Ile Asp Leu Ala Arg Thr Ala Leu Gln Asp
 405 410 415
 Ile Ile Ala Glu Lys His Lys Val Ile Thr Ala Asp Ile Ile Ile Asp
 420 425 430
 Ala Val Ala Lys Tyr Tyr Arg Ile Lys Ile Ser Asp Val Leu Gly Lys
 435 440 445
 Lys Arg Thr Arg Asn Ile Ala Arg Pro Arg Gln Val Ala Met Ser Leu
 450 455 460
 Thr Lys Glu Leu Thr Thr Leu Ser Leu Pro Ser Ile Gly Asp Ser Phe
 465 470 475 480
 Gly Gly Arg Asp His Thr Thr Val Met His Gly Ile Arg Ala Val Ala
 485 490 495
 Lys Leu Arg Glu Glu Asp Pro Glu Leu Ala Gln Asp Tyr Glu Lys Leu
 500 505 510

Leu Ile Leu Ile Gln Asn
 515

<210> 181
 <211> 521
 <212> PRT
 <213> Neisseria meningitidis

<400> 181
 Met Thr Gln Asp Lys Ile Leu Ile Leu Asp Phe Gly Ser Gln Val Thr
 1 5 10 15
 Gln Leu Ile Ala Arg Arg Val Arg Glu Ala His Val Tyr Cys Glu Leu
 20 25 30
 His Ser Phe Asp Met Pro Leu Asp Glu Ile Lys Ala Phe Asn Pro Lys
 35 40 45
 Gly Ile Ile Leu Ser Gly Gly Pro Asn Ser Val Tyr Glu Ser Asp Tyr
 50 55 60
 Gln Ala Asp Thr Gly Ile Phe Asp Leu Gly Ile Pro Val Leu Gly Ile

65					70					239 75				80
Cys	Tyr	Gly	Met	Gln 85	Phe	Met	Ala	His	His 90	Leu	Gly	Gly	Glu	Val 95
Pro	Gly	Asn	Gln 100	Arg	Glu	Phe	Gly	Tyr 105	Ala	Gln	Val	Lys	Thr 110	Ile Asp
Ser	Glu	Leu 115	Thr	Arg	Gly	Ile	Gln 120	Asp	Gly	Glu	Pro	Asn 125	Thr	Leu Asp
Val	Trp 130	Met	Ser	His	Gly	Asp 135	Lys	Val	Ser	Lys	Leu 140	Pro	Asp	Gly Phe
Ala 145	Val	Ile	Gly	Asn	Thr 150	Pro	Ser	Cys	Pro	Ile 155	Ala	Met	Met	Glu Asn 160
Ala	Glu	Lys	Gln	Phe 165	Tyr	Gly	Ile	Gln	Phe 170	His	Pro	Glu	Val	Thr His 175
Thr	Lys	Gln	Gly 180	Arg	Ala	Leu	Leu	Asn 185	Arg	Phe	Val	Leu	Asp 190	Ile Cys
Gly	Ala	Gln 195	Pro	Gly	Trp	Thr	Met 200	Pro	Asn	Tyr	Ile	Glu 205	Glu	Ala Val
Ala	Lys 210	Ile	Arg	Glu	Gln	Val 215	Gly	Ser	Asp	Glu	Val 220	Ile	Leu	Gly Leu
Ser 225	Gly	Gly	Val	Asp	Ser 230	Ser	Val	Ala	Ala	Ala 235	Leu	Ile	His	Arg Ala 240
Ile	Gly	Asp	Gln	Leu 245	Thr	Cys	Val	Phe	Val 250	Asp	His	Gly	Leu	Leu Arg 255
Leu	Asn	Glu	Ser 260	Lys	Met	Val	Met	Asp 265	Met	Phe	Ala	Arg	Asn 270	Leu Gly
Val	Lys	Val 275	Ile	His	Val	Asp	Ala 280	Glu	Gly	Gln	Phe	Met 285	Ala	Lys Leu
Ala	Gly 290	Val	Thr	Asp	Pro	Glu 295	Lys	Lys	Arg	Lys	Ile 300	Ile	Gly	Ala Glu
Phe 305	Ile	Glu	Val	Phe	Asp 310	Ala	Glu	Glu	Lys	Lys 315	Leu	Thr	Asn	Ala Lys 320
Trp	Leu	Ala	Gln	Gly 325	Thr	Ile	Tyr	Pro	Asp 330	Val	Ile	Glu	Ser	Ala Gly 335
Ala	Lys	Thr	Lys 340	Lys	Ala	His	Ala	Ile 345	Lys	Ser	His	His	Asn 350	Val Gly
Gly	Leu	Pro 355	Glu	Asn	Met	Lys	Leu 360	Lys	Leu	Leu	Glu	Pro 365	Leu	Arg Asp
Leu	Phe 370	Lys	Asp	Glu	Val	Arg 375	Glu	Leu	Gly	Val	Ala 380	Leu	Gly	Leu Pro
Arg 385	Glu	Met	Val	Tyr	Arg 390	His	Pro	Phe	Pro	Gly 395	Pro	Gly	Leu	Gly Val 400
Arg	Ile	Leu	Gly	Glu 405	Val	Lys	Lys	Glu	Tyr 410	Ala	Asp	Leu	Leu	Arg Gln 415

Ala Asp Asp Ile Phe Ile Gln Glu Leu Arg Asn Thr Thr Asp Glu Asn
 420 425 430
 Gly Thr Ser Trp Tyr Asp Leu Thr Ser Gln Ala Phe Ala Val Phe Leu
 435 440 445
 Pro Val Lys Ser Val Gly Val Met Gly Asp Gly Arg Thr Tyr Asp Tyr
 450 455 460
 Val Ile Ala Leu Arg Ala Val Ile Thr Ser Asp Phe Met Thr Ala His
 465 470 475 480
 Trp Ala Glu Leu Pro Tyr Ser Leu Leu Gly Lys Val Ser Asn Arg Ile
 485 490 495
 Ile Asn Glu Val Lys Gly Ile Asn Arg Val Val Tyr Asp Val Ser Gly
 500 505 510
 Lys Pro Pro Ala Thr Ile Glu Trp Glu
 515 520

<210> 182
 <211> 248
 <212> PRT
 <213> Neisseria meningitidis

<400> 182
 Met Ser Thr Gln Asp Leu Asn Gly Lys Ile Ala Leu Val Thr Gly Ala
 1 5 10 15
 Ser Arg Gly Ile Gly Ala Ala Ile Ala Asp Thr Leu Ala Ala Ala Gly
 20 25 30
 Ala Lys Val Ile Gly Thr Ala Thr Ser Glu Ser Gly Ala Ala Ala Ile
 35 40 45
 Ser Glu Arg Leu Ala Gln Trp Gly Gly Glu Gly Arg Val Leu Asn Ser
 50 55 60
 Ala Glu Pro Glu Thr Ile Glu Ser Leu Ile Ala Asp Ile Glu Lys Ala
 65 70 75 80
 Phe Gly Lys Leu Asp Ile Leu Val Asn Asn Ala Gly Ile Thr Arg Asp
 85 90 95
 Asn Leu Leu Met Arg Met Lys Glu Glu Glu Trp Asp Asp Ile Met Gln
 100 105 110
 Val Asn Leu Lys Ser Val Phe Arg Ala Ser Lys Ala Val Leu Arg Gly
 115 120 125
 Met Met Lys Gln Arg Ser Gly Arg Ile Ile Asn Ile Thr Ser Val Val
 130 135 140
 Gly Val Met Gly Asn Ala Gly Gln Thr Asn Tyr Ala Ala Ala Lys Ala
 145 150 155 160
 Gly Leu Ile Gly Phe Ser Lys Ser Met Ala Arg Glu Val Gly Ser Arg
 165 170 175
 Gly Ile Thr Val Asn Cys Val Ala Pro Gly Phe Ile Asp Thr Asp Met
 180 185 190

Thr Arg Ala Leu Pro Glu Glu Thr Arg Gln Thr Phe Thr Ala Gln Thr
 195 200 241 205
 Ala Leu Gly Arg Phe Gly Asp Ala Gln Asp Ile Ala Asp Ala Val Leu
 210 215 220
 Phe Leu Ala Ser Asp Gln Ala Lys Tyr Ile Thr Gly Gln Thr Leu His
 225 230 235 240
 Val Asn Gly Gly Met Leu Met Pro
 245

<210> 183
 <211> 687
 <212> PRT
 <213> Neisseria meningitidis

<400> 183
 Met Met Thr Gln Thr Leu Leu Ile Glu Leu Leu Thr Glu Glu Leu Pro
 1 5 10 15
 Pro Lys Ala Leu Asn Asn Leu Gly Asn His Phe Ala Ala Ser Val Ala
 20 25 30
 Glu Gly Leu Glu Lys Ala Gln Leu Val Asp Gly Ala Ala Glu Phe Thr
 35 40 45
 Ala Tyr Ala Ser Pro Arg Arg Leu Ala Val Gln Val Lys Asn Val Lys
 50 55 60
 Ala Val Gln Ala Asp Gln Lys Ile Val Lys Lys Gly Pro Ala Val Ala
 65 70 75 80
 Asn Ala Met Lys Asp Gly Ala Pro Thr Lys Ala Leu Glu Gly Phe Ala
 85 90 95
 Arg Gly Ala Gly Ala Lys Ile Glu Asp Leu Thr Ile Val His Asp Gly
 100 105 110
 Lys Gln Asp Val Tyr Ala Tyr Glu Tyr Val Gln Ile Gly Lys Pro Leu
 115 120 125
 Gly Gly Leu Leu Glu Asp Ile Ile Asn Gln Ala Val Lys Lys Leu Pro
 130 135 140
 Ile Pro Lys Val Met Arg Trp Gly Ser Ser Thr Phe Thr Phe Val Arg
 145 150 155 160
 Pro Val His Gly Leu Val Val Leu His Gly Gly Asp Ile Val Asn Val
 165 170 175
 Ser Val Leu Gly Leu Gln Ser Gly Asn Lys Thr Leu Gly His Arg Phe
 180 185 190
 Leu Ser Asp Gly Glu Ile Thr Ile Glu Asn Ala Asp Ser Tyr Ala Ala
 195 200 205
 Gln Met Arg Glu Gln Gly Lys Val Val Ala Ser Phe Ala Glu Arg Lys
 210 215 220
 Ala Ala Ile Gln Thr Val Leu Glu Gly Gln Ala Arg Arg Leu Asn Ala
 225 230 235 240
 Thr Ala Ala Ala Asp Glu Ala Leu Leu Asp Glu Val Thr Ala Leu Val

242															
245						250						255			
Glu	Trp	Pro	Val 260	Val	Leu	Glu	Ala	Gly 265	Phe	Glu	Glu	His	Phe 270	Leu	Ala
Val	Pro	Gln 275	Glu	Cys	Leu	Ile	Leu 280	Thr	Met	Gln	Gln	Asn 285	Gln	Lys	Tyr
Phe	Pro 290	Leu	Leu	Asp	Gln	Asn 295	Gly	Lys	Leu	Met	Asn 300	Arg	Phe	Leu	Leu
Val 305	Ser	Asn	Leu	Gln	Thr 310	Glu	Asp	Pro	Ser	His 315	Ile	Ile	Gln	Gly	Asn 320
Glu	Arg	Val	Leu	Arg 325	Ala	Arg	Leu	Ser	Asp 330	Ala	Glu	Phe	Phe	Tyr 335	Lys
Gln	Asp	Gln	Lys 340	Ala	Thr	Leu	Glu	Ser 345	Arg	Leu	Pro	Lys	Leu 350	Thr	Asn
Val	Val	Tyr 355	His	Asn	Lys	Ile	Gly 360	Ser	Gln	Ala	Glu	Arg 365	Ile	Glu	Arg
Leu	Gln 370	Ser	Ile	Ala	Ala	His 375	Ile	Ala	Lys	Ala	Leu 380	Gly	Ala	Asp	Ala
Ala 385	Ala	Ala	Glu	Arg	Ala 390	Ala	Arg	Leu	Ala	Lys 395	Ala	Asp	Leu	Val	Thr 400
Glu	Met	Val	Gly	Glu 405	Phe	Pro	Glu	Leu	Gln 410	Gly	Thr	Met	Gly	Lys 415	Tyr
Tyr	Ala	Arg	Leu 420	Asp	Gly	Glu	Thr	Glu 425	Glu	Ile	Thr	Glu	Ala 430	Val	Glu
Gln	His	Tyr 435	Gln	Pro	Arg	Phe	Ala 440	Gly	Asp	Asn	Leu	Pro 445	Glu	Gly	Lys
Ile	Ala 450	Ala	Ala	Val	Ala	Leu 455	Ala	Asp	Lys	Leu	Glu 460	Thr	Leu	Val	Gly
Ile 465	Trp	Gly	Ile	Gly	Leu 470	Ile	Pro	Thr	Gly	Asp 475	Lys	Asp	Pro	Tyr	Ala 480
Leu	Arg	Arg	Ala	Ala 485	Leu	Gly	Ile	Leu	Arg 490	Met	Leu	Met	Gln	Tyr 495	Gly
Leu	Asp	Val	Asn 500	Glu	Leu	Ile	Gln	Thr 505	Ala	Phe	Asn	Ser	Phe 510	Pro	Gln
Gly	Leu	Leu 515	Asn	Glu	Lys	Thr	Pro 520	Ser	Glu	Thr	Ala	Asp 525	Phe	Met	Gln
Ala	Arg 530	Leu	Ala	Val	Leu	Leu 535	Gln	Asn	Asp	Tyr	Pro 540	Gln	Asp	Ile	Val
Ala 545	Ala	Val	Leu	Ala	Lys 550	Gln	Pro	Arg	Arg	Leu 555	Asp	Asp	Leu	Thr	Ala 560
Lys	Leu	Gln	Ala	Val 565	Ala	Ala	Phe	Lys	Gln 570	Leu	Pro	Glu	Ala	Ala 575	Ala
Leu	Ala	Ala	Ala 580	Asn	Lys	Arg	Val	Gln 585	Asn	Leu	Leu	Lys	Lys 590	Ala	Asp

Ala Glu Leu Gly Ala Val Asn Glu Ser Leu Leu Gln Gln Asp Glu Glu
 595 600 605
 Lys Ala Leu Phe Ala Ala Ala Gln Gly Leu Gln Pro Lys Ile Ala Ala
 610 615 620
 Ala Val Ala Glu Gly Asn Phe Gln Thr Ala Leu Ser Glu Leu Ala Ser
 625 630 635 640
 Val Lys Pro Gln Val Asp Ala Phe Phe Asp Gly Val Met Val Met Ala
 645 650 655
 Glu Asp Ala Ala Val Lys Gln Asn Arg Leu Asn Leu Leu Asn Arg Leu
 660 665 670
 Ala Glu Gln Met Asn Ala Val Ala Asp Ile Ala Leu Leu Gly Glu
 675 680 685
 <210> 184
 <211> 465
 <212> PRT
 <213> Neisseria meningitidis
 <400> 184
 Met Ser Gln Gly Lys Ile Val Gln Ile Ile Gly Ala Val Val Asp Val
 1 5 10 15
 Glu Phe Pro Arg Asp Met Ile Pro Arg Val Tyr Asp Ala Leu Lys Leu
 20 25 30
 Asp Glu Asn Gly Leu Thr Leu Glu Val Gln Gln Leu Leu Gly Asp Gly
 35 40 45
 Val Val Arg Ala Ile Ala Met Gly Ser Ser Asp Gly Leu Lys Arg Gly
 50 55 60
 Met Thr Val Ser Asn Thr Gly Ala Pro Ile Thr Val Pro Val Gly Lys
 65 70 75 80
 Gly Thr Leu Gly Arg Ile Val Asp Val Leu Gly Thr Pro Val Asp Glu
 85 90 95
 Ala Gly Pro Ile Asp Thr Asp Lys Ser Arg Ala Ile His Gln Ala Ala
 100 105 110
 Pro Lys Phe Asp Glu Leu Ser Ser Thr Thr Glu Leu Leu Glu Thr Gly
 115 120 125
 Ile Lys Val Ile Asp Leu Leu Cys Pro Phe Ala Lys Gly Gly Lys Val
 130 135 140
 Gly Leu Phe Gly Gly Ala Gly Val Gly Lys Thr Val Asn Met Met Glu
 145 150 155 160
 Leu Ile Asn Asn Ile Ala Lys Ala His Ser Gly Leu Ser Val Phe Ala
 165 170 175
 Gly Val Gly Glu Arg Thr Arg Glu Gly Asn Asp Phe Tyr His Glu Met
 180 185 190
 Lys Asp Ser Asn Val Leu Asp Lys Val Ala Met Val Tyr Gly Gln Met
 195 200 205

Asn Glu Pro Pro Gly Asn Arg Leu Arg Val Ala²⁴⁴ Leu Thr Gly Leu Thr
 210 215 220
 Met Ala Glu Tyr Phe Arg Asp Glu Lys Asp Glu Asn Gly Lys Gly Arg
 225 230 235 240
 Asp Val Leu Phe Phe Val Asp Asn Ile Tyr Arg Tyr Thr Leu Ala Gly
 245 250 255
 Thr Glu Val Ser Ala Leu Leu Gly Arg Met Pro Ser Ala Val Gly Tyr
 260 265 270
 Gln Pro Thr Leu Ala Glu Glu Met Gly Arg Leu Gln Glu Arg Ile Thr
 275 280 285
 Ser Thr Gln Thr Gly Ser Ile Thr Ser Ile Gln Ala Val Tyr Val Pro
 290 295 300
 Ala Asp Asp Leu Thr Asp Pro Ser Pro Ala Thr Thr Phe Ala His Leu
 305 310 315 320
 Asp Ala Thr Val Val Leu Ser Arg Asp Ile Ala Ser Leu Gly Ile Tyr
 325 330 335
 Pro Ala Val Asp Pro Leu Asp Ser Thr Ser Arg Gln Leu Asp Pro Met
 340 345 350
 Val Leu Gly Gln Glu His Tyr Asp Val Ala Arg Gly Val Gln Ser Thr
 355 360 365
 Leu Gln Lys Tyr Lys Glu Leu Arg Asp Ile Ile Ala Ile Leu Gly Met
 370 375 380
 Asp Glu Leu Ser Asp Glu Asp Lys Leu Thr Val Met Arg Ala Arg Lys
 385 390 395 400
 Ile Gln Arg Phe Leu Ser Gln Pro Phe His Val Ala Glu Val Phe Thr
 405 410 415
 Gly Ser Pro Gly Lys Tyr Val Ala Leu Arg Asp Thr Ile Ala Gly Phe
 420 425 430
 Lys Ala Ile Leu Asn Gly Glu Tyr Asp His Leu Pro Glu Gln Ala Phe
 435 440 445
 Tyr Met Val Gly Ser Ile Glu Glu Ala Val Glu Lys Ala Lys Thr Leu
 450 455 460

Asn
 465

<210> 185
 <211> 515
 <212> PRT
 <213> Neisseria meningitidis

<400> 185
 Met Gln Leu Asn Pro Ala Glu Ile Ser Asp Leu Ile Lys Ala Lys Ile
 1 5 10 15

Glu Asn Leu Ser Val Asn Ala Glu Val Arg Thr Cys Gly Thr Val Ile
 20 25 30

ser val Thr Asp Gly Ile val Arg Ile His Gly Leu Ser Asp Ala Met

Protein structure: 16 amino acids															
35				40				245				45			
Gln	Gly 50	Glu	Met	Leu	Glu	Phe 55	Pro	Gly	Asn	Thr	Phe 60	Gly	Leu	Ala	Met
Asn 65	Leu	Glu	Arg	Asp	Ser 70	Val	Gly	Ala	Val	Val 75	Leu	Gly	Glu	Tyr	Glu 80
His	Ile	Lys	Glu	Gly 85	Asp	Thr	Val	Thr	Cys 90	Thr	Gly	Arg	Ile	Leu 95	Glu
Val	Pro	Val	Gly 100	Arg	Glu	Leu	Val	Gly 105	Arg	Val	Val	Asp	Ala 110	Leu	Gly
Arg	Pro	Ile 115	Asp	Gly	Lys	Gly	Pro 120	Ile	Asn	Thr	Thr	Leu 125	Thr	Ala	Pro
Ile	Glu 130	Lys	Ile	Ala	Pro	Gly 135	Val	Ile	Ala	Arg	Lys 140	Ser	Val	Asp	Gln
Pro 145	Met	Gln	Thr	Gly	Leu 150	Lys	Ala	Ile	Asp	Ser 155	Met	Val	Pro	Val	Gly 160
Arg	Gly	Gln	Arg	Glu 165	Leu	Ile	Ile	Gly	Asp 170	Arg	Gln	Thr	Gly	Lys 175	Thr
Ala	Val	Ala	Leu 180	Asp	Ala	Ile	Val	Asn 185	Gln	Lys	Gly	Thr	Gly 190	Val	Ile
Cys	Ile	Tyr 195	Val	Ala	Ile	Gly	Gln 200	Lys	Ala	Ser	Ser	Ile 205	Ala	Asn	Val
Val	Arg 210	Lys	Leu	Glu	Glu	His 215	Gly	Ala	Met	Glu	His 220	Thr	Ile	Val	Val
Ala 225	Ala	Thr	Ala	Ser	Glu 230	Ala	Ala	Ala	Leu	Gln 235	Tyr	Ile	Ala	Pro	Tyr 240
Ser	Gly	Cys	Thr	Met 245	Gly	Glu	Phe	Phe	Arg 250	Asp	Arg	Gly	Glu	Asp 255	Ala
Leu	Ile	Val	Tyr 260	Asp	Asp	Leu	Ser	Lys 265	Gln	Ala	Val	Ala	Tyr 270	Arg	Gln
Ile	Ser	Leu 275	Leu	Leu	Arg	Arg	Pro 280	Pro	Gly	Arg	Glu	Ala 285	Tyr	Pro	Gly
Asp	Val 290	Phe	Tyr	Leu	His	Ser 295	Arg	Leu	Leu	Glu	Arg 300	Ala	Ala	Arg	Val
Asn 305	Glu	His	Glu	Val	Glu 310	Lys	Leu	Thr	Asn	Gly 315	Glu	Val	Lys	Gly	Lys 320
Thr	Gly	Ser	Leu	Thr 325	Ala	Leu	Pro	Ile	Ile 330	Glu	Thr	Gln	Ala	Gly 335	Asp
Val	Ser	Ala	Phe 340	Val	Pro	Thr	Asn	Val 345	Ile	Ser	Ile	Thr	Asp 350	Gly	Gln
Ile	Phe	Leu 355	Glu	Thr	Asp	Leu	Phe 360	Asn	Ala	Gly	Ile	Arg 365	Pro	Ala	Ile
Asn	Ala 370	Gly	Ile	Ser	Val	Ser 375	Arg	Val	Gly	Gly	Ala 380	Ala	Gln	Thr	Lys

val Ile Lys Lys Leu Gly Gly Gly Ile Arg Leu Ala Leu Ala Gln Tyr
 385 390 395 400
 Arg Glu Leu Ala Ala Phe Ser Gln Phe Ala Ser Asp Leu Asp Glu Ala
 405 410 415
 Thr Arg Lys Gln Leu Glu His Gly Glu Val Val Thr Glu Leu Met Lys
 420 425 430
 Gln Lys Gln Phe Ser Thr Leu Asn Thr Ala Glu Met Ala Leu Thr Leu
 435 440 445
 Trp Ala Ile Asn Asn Gly Ser Tyr Ser Asp Val Pro Val Ala Lys Ala
 450 455 460
 Leu Ala Phe Glu Ser Glu Phe Leu Ser Phe Val Arg Thr Gln His Pro
 465 470 475 480
 Glu Val Leu Glu Ala Val Asn Ala Ser Gly Ala Met Ser Asp Glu Ser
 485 490 495
 Glu Lys Thr Leu Glu Ala Ala Met Lys Ser Phe Lys Ser Ser Tyr Ala
 500 505 510
 Tyr Gln Ala
 515
 <210> 186
 <211> 177
 <212> PRT
 <213> Neisseria meningitidis
 <400> 186
 Met Ala Glu Phe Ala Thr Ile Ala Arg Pro Tyr Ala Lys Ala Leu Phe
 1 5 10 15
 Gly Leu Ala Gln Glu Lys Asn Gln Ile Glu Ser Trp Leu Gly Gly Leu
 20 25 30
 Glu Lys Leu Ala Ala Val Val Gln Glu Gly Lys Val Ala Ser Leu Ile
 35 40 45
 Asp Arg Pro Glu Thr Asn Ala Ser Glu Lys Ala Asp Ile Leu Ile Asp
 50 55 60
 Leu Val Gly Leu Lys Asp Lys Glu Leu Lys Asn Phe Val Ile Val Leu
 65 70 75 80
 Ala Gly Gln Lys Arg Leu Ser Ile Leu Pro Glu Val Tyr Ala Gln Tyr
 85 90 95
 Gln Asp Leu Thr Leu Ser Phe Asn His Ile Lys Ser Ala Val Ile Tyr
 100 105 110
 Ser Ala Tyr Pro Leu Thr Asp Lys Gln Val Gly Glu Leu Val Gln Met
 115 120 125
 Leu Asn Lys Arg Phe Asp Ser Glu Leu Lys Ile Ser Val Glu Ile Glu
 130 135 140
 Pro Glu Leu Ile Gly Gly Ile Lys Val Glu Val Gly Asp Gln Val Leu
 145 150 155 160

Asp Leu Ser Val Gln Gly Lys Leu Ser Ala Leu Tyr Thr Thr Met Thr
165 170 175 247

Asn

<210> 187
<211> 156
<212> PRT
<213> Neisseria meningitidis

<400> 187
Met Asn Ile Asn Ala Thr Leu Phe Ala Gln Ile Ile Val Phe Phe Gly
1 5 10 15
Leu Val Trp Phe Thr Met Lys Phe Val Trp Pro Pro Ile Ala Lys Ala
20 25 30
Leu Asp Glu Arg Ala Ala Lys Val Ala Glu Gly Leu Ala Ala Ala Glu
35 40 45
Arg Gly Lys Ser Asp Phe Glu Gln Ala Glu Lys Lys Val Ala Glu Leu
50 55 60
Leu Ala Glu Gly Arg Asn Gln Val Ser Glu Met Val Ala Asn Ala Glu
65 70 75 80
Lys Arg Ala Ala Lys Ile Val Glu Glu Ala Lys Glu Gln Ala Ser Ser
85 90 95
Glu Ala Ala Arg Ile Ala Ala Gln Ala Lys Ala Asp Val Glu Gln Glu
100 105 110
Leu Phe Arg Ala Arg Glu Ser Leu Arg Glu Gln Val Ala Val Leu Ala
115 120 125
Val Lys Gly Ala Glu Ser Ile Leu Arg Ser Glu Val Asp Ala Ser Lys
130 135 140
His Ala Lys Leu Leu Asp Thr Leu Lys Gln Glu Leu
145 150 155

<210> 188
<211> 201
<212> PRT
<213> Neisseria meningitidis

<400> 188
Met Met Thr Leu Tyr Ser Gly Ile Thr Cys Pro Phe Ser His Arg Cys
1 5 10 15
Arg Phe Val Leu Tyr Glu Lys Gly Met Asp Phe Glu Ile Lys Asp Val
20 25 30
Asp Ile Tyr Asn Lys Pro Glu Asp Leu Ala Val Met Asn Pro Tyr Asn
35 40 45
Gln Val Pro Val Leu Val Glu Arg Asp Leu Val Leu His Glu Ser Asn
50 55 60
Ile Ile Asn Glu Tyr Ile Asp Glu Arg Phe Pro His Pro Gln Leu Met
65 70 75 80
Pro Gly Asp Pro Val Met Arg Gly Arg Gly Arg Leu Val Leu Tyr Arg

				85					90	248			95		
Met	Glu	Lys	Glu	Leu	Phe	Asn	His	Val	Gln	Val	Leu	Glu	Asn	Pro	Ala
			100					105					110		
Ala	Thr	Asn	Lys	Glu	Gln	Ala	Lys	Ala	Arg	Glu	Ala	Ile	Gly	Asn	Gly
		115					120					125			
Leu	Thr	Met	Leu	Ala	Pro	Ser	Phe	Ser	Lys	Ser	Lys	Tyr	Ile	Leu	Gly
	130					135					140				
Glu	Asp	Phe	Ser	Met	Ile	Asp	Val	Ala	Leu	Ala	Pro	Leu	Leu	Trp	Arg
145					150					155					160
Leu	Asp	His	Tyr	Asp	Val	Lys	Leu	Gly	Lys	Ser	Ala	Ala	Pro	Leu	Leu
				165					170					175	
Lys	Tyr	Ala	Glu	Arg	Ile	Phe	Gln	Arg	Glu	Ala	Phe	Ile	Glu	Ala	Leu
			180					185					190		
Thr	Pro	Ala	Glu	Lys	Ala	Met	Arg	Lys							
		195					200								
<210>	189														
<211>	266														
<212>	PRT														
<213>	Neisseria meningitidis														
<400>	189														
Met	Ser	Pro	Ser	Pro	Phe	Ile	Glu	Met	Lys	Asp	Val	Ala	Phe	Ala	Tyr
1				5					10					15	
Gly	Asp	Arg	Pro	Ile	Leu	Lys	Asn	Ile	Asn	Phe	Ser	Ile	Pro	Gln	Gly
			20					25					30		
Asn	Phe	Ala	Ala	Val	Met	Gly	Gly	Ser	Gly	Ser	Gly	Lys	Thr	Thr	Leu
		35					40					45			
Met	Arg	Leu	Ile	Thr	Gly	Gln	Ile	Arg	Pro	Gln	Ser	Gly	Gln	Val	Leu
	50					55					60				
Ile	Glu	Gly	Arg	Asp	Leu	Ala	Gly	Phe	Ser	Ala	Asp	Glu	Leu	Tyr	Glu
65					70					75					80
His	Arg	Arg	Arg	Met	Gly	Val	Leu	Phe	Gln	His	Gly	Ala	Leu	Phe	Thr
				85					90					95	
Asp	Leu	Ser	Val	Phe	Asp	Asn	Ile	Ala	Phe	Pro	Met	Arg	Glu	Leu	Thr
			100					105					110		
Arg	Leu	Pro	Glu	Ala	Val	Ile	Arg	Asp	Leu	Val	Leu	Leu	Lys	Leu	Asn
		115					120					125			
Ala	Val	Gly	Leu	Arg	Gly	Val	Glu	Asn	Leu	Met	Pro	Ser	Glu	Leu	Ser
	130					135					140				
Gly	Gly	Met	Ser	Arg	Arg	Val	Ala	Leu	Ala	Arg	Thr	Ile	Ala	Leu	Asp
145					150					155					160
Pro	Glu	Ile	Met	Leu	Tyr	Asp	Glu	Pro	Phe	Thr	Gly	Leu	Asp	Pro	Ile
				165					170					175	
Ser	Leu	Gly	Val	Ile	Ala	His	Leu	Ile	Ser	Arg	Val	Asn	Lys	Ala	Leu
			180					185					190		

Arg Ser Thr Ser Ile Met Val Thr His Asp Ile Glu Lys Ser Leu Glu
 195 200 205
 Ile Val Asp Gln Val Ile Phe Leu Ala His Gly Glu Ile Met Phe Ser
 210 215 220
 Gly Ser Pro Gln Glu Met Arg Glu Leu Asp Ser Pro Trp Val Arg Gln
 225 230 235 240
 Phe Val Gly Gly Leu Ala Asp Gly Pro Val Ala Tyr Arg Tyr Pro Ala
 245 250 255
 Gln Thr Ser Leu Gln Gln Asp Leu Leu Gly
 260 265

<210> 190
 <211> 480
 <212> PRT
 <213> Neisseria meningitidis

<400> 190
 Met Lys Gln Leu Ala Met Tyr Ile Asn Gly Arg Phe Glu Asn Asp Phe
 1 5 10 15
 Asn Gly Glu Trp Arg Asp Val Leu Asn Pro Ser Thr Glu Glu Ala Ile
 20 25 30
 Ala Arg Glu Pro Lys Gly Gly Lys Ala Asp Val Asp Arg Ala Val Ala
 35 40 45
 Ala Ala Arg Ala Ala Gln Pro Ala Trp Glu Arg Leu Pro Ala Val Glu
 50 55 60
 Arg Gly Ala Tyr Leu Arg Lys Ile Ala Gln Gly Ile Arg Glu Arg Ala
 65 70 75 80
 Asp Glu Leu Thr Asp Thr Ile Val Ala Glu Gly Gly Lys Thr Lys Asp
 85 90 95
 Leu Ala Arg Val Glu Val Met Phe Thr Ala Asp Tyr Leu Asp Tyr Gln
 100 105 110
 Ala Glu Trp Ala Arg Arg Tyr Glu Gly Glu Ile Ile Gln Ser Asp Arg
 115 120 125
 Pro Arg Glu Asn Ile Leu Leu Phe Lys Arg Pro Leu Gly Val Ile Ala
 130 135 140
 Gly Ile Leu Pro Trp Asn Phe Pro Phe Phe Leu Ile Ala Arg Lys Met
 145 150 155 160
 Gly Pro Ala Leu Val Thr Gly Asn Thr Ile Val Val Lys Pro Ser Ser
 165 170 175
 Val Thr Pro Ile Asn Cys His Ile Phe Ala Glu Ile Val Asp Ala Val
 180 185 190
 Gly Leu Pro Ala Gly Val Phe Asn Val Val Asn Gly Pro Gly Ala Glu
 195 200 205
 Ile Gly Asn Ala Leu Ser Ala His Pro Gln Val Asp Met Val Ser Leu
 210 215 220

Thr Gly Ser Val Glu Ala Gly Arg Gln Val Met²⁵⁰ Glu Ala Ala Ser Ala
 225 230 235 240
 Asn Ile Thr Lys Val Ser Leu Glu Leu Gly Gly Lys Ala Pro Ala Ile
 245 250 255
 Val Leu Lys Asp Ala Asp Leu Asp Leu Ala Val Lys Ser Ile Leu Ala
 260 265 270
 Ser Arg Val Gly Asn Thr Gly Gln Ile Cys Asn Cys Ala Glu Arg Val
 275 280 285
 Tyr Val His Ser Ser Leu Lys Asp Ala Phe Ile Glu Lys Met Thr Ala
 290 295 300
 Ala Met Lys Gly Val Arg Tyr Gly Asn Pro Ala Glu Ala Glu Ala Gly
 305 310 315 320
 Ala Leu Glu Met Gly Pro Leu Ile Glu Glu Arg Ala Val Lys Ala Val
 325 330 335
 Ala Glu Lys Val Glu Arg Ala Val Lys Gln Gly Ala Lys Leu Val Cys
 340 345 350
 Gly Gly Lys Arg Ala Glu Gly Arg Gly Tyr Phe Phe Glu Pro Thr Leu
 355 360 365
 Leu Thr Asp Thr Asp Asn Ser Met Asp Ile Met Lys Glu Glu Thr Phe
 370 375 380
 Gly Pro Val Leu Pro Val Ser Ala Phe Asp Thr Leu Asp Gln Val Ile
 385 390 395 400
 Ala Leu Ala Asn Asp Cys Glu Phe Gly Leu Thr Ser Ser Val Tyr Thr
 405 410 415
 Thr Asn Leu Asn Glu Ala Phe Tyr Val Thr Arg Arg Leu Gln Phe Gly
 420 425 430
 Glu Thr Tyr Ile Asn Arg Glu Asn Phe Glu Ala Met Gln Gly Phe His
 435 440 445
 Ala Gly Trp Lys Lys Ser Gly Ile Gly Gly Ala Asp Gly Lys His Gly
 450 455 460
 Leu Glu Glu Tyr Leu Gln Thr Gln Val Val Tyr Leu Glu Thr Asp Ile
 465 470 475 480

<210> 191
 <211> 938
 <212> PRT
 <213> Neisseria meningitidis

<400> 191
 Met Ser Asn Arg Pro Thr Leu Leu Leu Val Asp Gly Ser Ser Tyr Leu
 1 5 10 15
 Tyr Arg Ala Tyr His Ala Met Gly Gln Asn Leu Thr Ala Pro Asp Gly
 20 25 30
 Ala Pro Thr Gly Ala Leu Tyr Gly Val Leu Asn Met Leu Arg Arg Leu
 35 40 45

Arg Ser Glu Tyr Pro His Asp Tyr Cys Ala Val Val Phe Asp Ala Lys
 50 55 60 251
 Gly Lys Asn Phe Arg His Gln Met Phe Glu Glu Tyr Lys Ala Thr Arg
 65 70 75 80
 Pro Pro Met Pro Asp Asp Leu Arg Pro Gln Ala Glu Ala Leu Pro Asp
 85 90 95
 Leu Val Arg Leu Thr Gly Trp Pro Val Leu Val Ile Gly Gln Val Glu
 100 105 110
 Ala Asp Asp Val Ile Gly Thr Leu Ala Lys Gln Gly Ala Glu His Gly
 115 120 125
 Leu Arg Val Ile Val Ser Thr Gly Asp Lys Asp Met Ala Gln Leu Val
 130 135 140
 Asp Glu Arg Val Thr Leu Val Asn Thr Met Ser Ser Glu Thr Leu Asp
 145 150 155 160
 Ile Glu Gly Val Lys Ala Lys Phe Gly Val Arg Pro Asp Gln Ile Arg
 165 170 175
 Asp Tyr Leu Ala Leu Met Gly Asp Lys Val Asp Asn Val Pro Gly Val
 180 185 190
 Glu Lys Cys Gly Pro Lys Thr Ala Val Lys Trp Leu Glu Ala Tyr Gly
 195 200 205
 Ser Leu Ala Gly Val Met Glu His Ala Ser Glu Ile Lys Gly Lys Val
 210 215 220
 Gly Glu Asn Leu Gln Ala Ala Leu Pro Gln Leu Pro Leu Ser Tyr Asp
 225 230 235 240
 Leu Val Thr Ile Lys Thr Asp Val Asp Leu His Ala Glu Leu Ser Asp
 245 250 255
 Gly Ile Glu Ser Leu Arg Arg Thr Thr Pro Lys Trp Ala Gln Leu Val
 260 265 270
 Val Asp Phe Lys Arg Trp Gly Phe Arg Thr Trp Leu Lys Glu Ala Glu
 275 280 285
 Ser Asn Met Asn Thr Gly Ser Thr Asp Asp Leu Phe Gly Ser Asp Ser
 290 295 300
 Ile Gly Glu Gln Ala Ala Leu Asn Ala Glu Met Pro Phe Glu Lys Gln
 305 310 315 320
 Ala Glu Lys Ala Thr Ala Pro Glu Lys Leu Asp Tyr Gln Ala Val Thr
 325 330 335
 Thr Glu Ala Gln Phe Ala Ala Leu Leu Asp Lys Leu Ser Arg Ala Asp
 340 345 350
 Thr Ile Gly Ile Asp Thr Glu Thr Thr Ser Leu Asp Ala Met Asn Ala
 355 360 365
 Ser Leu Val Gly Ile Ser Ile Ala Phe Gln Ala Gly Glu Ala Val Tyr
 370 375 380
 Ile Pro Val Gly His Ser Leu Thr Ala Ala Pro Glu Gln Leu Asp Leu

										252								
385				390						395		400						
Gln	Asp	Val	Leu	Gly 405	Arg	Leu	Lys	Pro	His 410	Leu	Gly	Asn	Pro	Ala 415	Leu			
Lys	Lys	Ile	Gly 420	Gln	Asn	Leu	Lys	Tyr 425	Asp	Gln	His	Val	Phe 430	Ala	Asn			
Tyr	Gly	Ile 435	Ala	Leu	Asn	Gly	Ile 440	Ala	Gly	Asp	Ala	Met 445	Leu	Ala	Ser			
Tyr	Ile 450	Ile	Glu	Ser	His	Leu 455	Gly	His	Gly	Leu	Asp 460	Glu	Leu	Ser	Glu			
Arg 465	Trp	Leu	Gly	Leu	Glu 470	Thr	Ile	Thr	Tyr	Glu 475	Ser	Leu	Cys	Gly	Lys 480			
Gly	Ala	Lys	Gln	Ile 485	Gly	Phe	Ala	Asp	Val 490	Ala	Ile	Gly	Gln	Ala 495	Thr			
Glu	Tyr	Ala	Ala 500	Gln	Asp	Ala	Asp	Phe 505	Ala	Leu	Arg	Leu	Glu 510	Ala	His			
Leu	Arg	Ala 515	Gln	Met	Asp	Glu	Lys 520	Gln	Leu	Glu	Met	Tyr 525	Glu	Lys	Met			
Glu	Leu 530	Pro	Val	Ala	Gln	Val 535	Leu	Phe	Glu	Met	Glu 540	Arg	Asn	Gly	Val			
Gln 545	Ile	Asp	Arg	Ala	Glu 550	Leu	Ala	Arg	Gln	Ser 555	Ala	Glu	Leu	Gly	Ala 560			
Glu	Leu	Met	Lys	Leu 565	Glu	Gln	Glu	Ala	Tyr 570	Ala	Ala	Ala	Gly	Gln 575	Pro			
Phe	Asn	Leu	Asn 580	Ser	Pro	Lys	Gln	Leu 585	Gln	Glu	Ile	Leu	Phe 590	Asp	Lys			
Met	Gly	Ile 595	Pro	Thr	Lys	Gly	Leu 600	Lys	Lys	Thr	Ala	Lys 605	Gly	Gly	Ile			
Ser	Thr 610	Asn	Glu	Ala	Val	Leu 615	Glu	Gln	Leu	Ala	Pro 620	Asp	Tyr	Pro	Leu			
Pro 625	Lys	Ile	Ile	Leu	Gln 630	Asn	Arg	Ser	Leu	Ala 635	Lys	Leu	Lys	Ser	Thr 640			
Tyr	Thr	Asp	Lys	Leu 645	Pro	Glu	Met	Ile	Ser 650	Pro	Lys	Asp	Gly	Arg 655	Val			
His	Thr	Thr	Tyr 660	Ala	Gln	Ala	Val	Ala 665	Ile	Thr	Gly	Arg	Leu 670	Ala	Ser			
Asn	Asn	Pro 675	Asn	Leu	Gln	Asn	Ile 680	Pro	Ile	Arg	Thr	Glu 685	Glu	Gly	Arg			
Lys	Val 690	Arg	Arg	Ala	Phe	Thr 695	Ala	Pro	Gln	Gly	Ser 700	Val	Ile	Val	Ser			
Ala 705	Asp	Tyr	Ser	Gln	Ile 710	Glu	Leu	Arg	Ile	Met 715	Ala	His	Leu	Ser	Gly 720			
Asp	Lys	Thr	Leu	Ile 725	Ala	Ala	Phe	Gln	Asn 730	Gly	Glu	Asp	Val	His 735	Arg			

Arg Thr Ala Ala Glu Val Phe Gly Thr Ala Pro Glu Asn Val Ser Ser
 740 745 750
 Glu Gln Arg Arg Tyr Ala Lys Ser Ile Asn Phe Gly Leu Ile Tyr Gly
 755 760 765
 Met Gly Gln Tyr Gly Leu Ala Lys Ser Leu Gly Ile Asp Asn Leu Ser
 770 775 780
 Ala Lys Asn Phe Ile Asp Arg Tyr Phe Ala Arg Tyr Pro Gly Val Ala
 785 790 795 800
 Glu Tyr Met Gln Arg Thr Lys Glu Gln Ala Ala Ala Gln Gly Tyr Val
 805 810 815
 Glu Thr Leu Phe Gly Arg Arg Leu Tyr Leu Pro Asp Ile Arg Asn Lys
 820 825 830
 Asn Ala Asn Ala Arg Ala Gly Ala Glu Arg Ala Ala Ile Asn Ala Pro
 835 840 845
 Met Gln Gly Thr Ala Ser Asp Leu Ile Lys Arg Ala Met Ile Asp Val
 850 855 860
 Ser Arg Trp Leu Ser Glu Cys Glu Ala Ser Pro Trp Asp Glu Leu Leu
 865 870 875 880
 Gln Ser Lys Leu Ile Met Gln Val His Asp Glu Leu Val Leu Glu Val
 885 890 895
 Val Glu Thr Glu Leu Asp Phe Val Lys Glu Lys Leu Pro Gln Ile Met
 900 905 910
 Ala Lys Val Asp Gly Gly Leu Leu Asp Val Pro Leu Val Ala Glu Val
 915 920 925
 Gly Val Gly Glu Asn Trp Glu Glu Ala His
 930 935

<210> 192
 <211> 1320
 <212> PRT
 <213> Neisseria meningitidis

<400> 192
 Met Ser Val Val Leu Pro Leu Arg Gly Val Thr Ala Leu Ser Asp Phe
 1 5 10 15
 Arg Val Glu Lys Leu Leu Gln Lys Ala Ala Ala Leu Gly Leu Pro Glu
 20 25 30
 Val Lys Leu Ser Ser Glu Phe Trp Tyr Phe Val Gly Ser Glu Lys Ala
 35 40 45
 Leu Asp Ala Ala Thr Val Glu Lys Leu Gln Ala Leu Leu Ala Ala Gln
 50 55 60
 Ser Val Glu Gln Thr Pro Lys Ala Arg Glu Gly Leu His Leu Phe Leu
 65 70 75 80
 Val Thr Pro Arg Leu Gly Thr Ile Ser Pro Trp Ala Ser Lys Ala Thr
 85 90 95

Asn Ile Ala Glu₁₀₀ Asn Cys Gly Leu Ala₁₀₅ Gly Ile²⁵⁴ Glu Arg Ile Glu Arg
 Gly Met Ala₁₁₅ Val Trp Leu Glu Gly₁₂₀ Arg Leu Asn Asp Glu₁₂₅ Gln Lys Gln
 Gln Trp₁₃₀ Ala Ala Leu Leu His₁₃₅ Asp Arg Met Thr Glu₁₄₀ Ser Val Leu Pro
 Asp₁₄₅ Phe Gln Thr Ala Ser₁₅₀ Lys Leu Phe His His₁₅₅ Leu Glu Ser Glu Thr₁₆₀
 Phe Ser Gly Val Asp₁₆₅ Val Leu Gly Gly₁₇₀ Lys Glu Ala Leu Val₁₇₅ Lys
 Ala Asn Thr Glu₁₈₀ Met Gly Leu Ala Leu₁₈₅ Ser Ala Asp Glu Ile₁₉₀ Asp Tyr
 Leu Val Glu₁₉₅ Asn Tyr Gln Ala Leu₂₀₀ Gln Arg Asn Pro Ser₂₀₅ Asp Val Glu
 Leu Met₂₁₀ Met Phe Ala Gln Ala₂₁₅ Asn Ser Glu His Cys₂₂₀ Arg His Lys Ile
 Phe₂₂₅ Asn Ala Asp Phe Ile₂₃₀ Leu Asn Gly Glu Lys₂₃₅ Gln Pro Lys Ser Leu₂₄₀
 Phe Gly Met Ile Arg₂₄₅ Asp Thr His Asn Ala₂₅₀ His Pro Glu Gly Thr Val₂₅₅
 Val Ala Tyr Lys₂₆₀ Asp Asn Ser Ser Val₂₆₅ Ile Glu Gly Ala Lys₂₇₀ Ile Glu
 Arg Phe Tyr₂₇₅ Pro Asn Ala Ala Glu₂₈₀ Asn Gln Gly Tyr Arg₂₈₅ Phe His Glu
 Glu Asp₂₉₀ Thr His Ile Ile Met₂₉₅ Lys Val Glu Thr His₃₀₀ Asn His Pro Thr
 Ala Ile Ala Pro Phe Ala₃₁₀ Gly Ala Ala Thr Gly₃₁₅ Ala Gly Gly Glu Ile₃₂₀
 Arg Asp Glu Gly Ala₃₂₅ Thr Gly Lys Gly Ser₃₃₀ Arg Pro Lys Ala Gly₃₃₅ Leu
 Thr Gly Phe Thr₃₄₀ Val Ser Asn Leu Asn₃₄₅ Ile Pro Asp Leu Lys₃₅₀ Gln Pro
 Trp Glu Gln₃₅₅ Asp Tyr Gly Lys Pro₃₆₀ Glu His Ile Ser Ser₃₆₅ Pro Leu Asp
 Ile Met₃₇₀ Ile Glu Gly Pro Ile₃₇₅ Gly Gly Ala Ala Phe Asn Asn Glu Phe
 Gly₃₈₅ Arg Pro Asn Leu Leu₃₉₀ Gly Tyr Phe Arg Thr₃₉₅ Phe Glu Glu Lys Phe₄₀₀
 Asp Gly Gln Val Arg₄₀₅ Gly Tyr His Lys Pro₄₁₀ Ile Met Ile Ala Gly₄₁₅ Gly
 Leu Gly Ser Ile₄₂₀ Gln Ala Gln Gln Thr₄₂₅ His Lys Asp Glu Ile₄₃₀ Pro Glu
 Gly Ala Leu Leu Ile Gln Leu Gly Gly Pro Gly Met Leu Ile Gly Leu

435										440										255										445									
Gly	Gly	Gly	Ala	Ala	Ser	Ser	Met	Asp	Thr	Gly	Thr	Asn	Asp	Ala	Ser	Leu	Asp	Phe	Asn	Val	Gln	Arg	Gly	Asn	Pro	Glu	Ile	Glu	Arg	Arg									
450	465	470	485	500	515	530	545	555	570	585	600	615	630	645	660	675	690	705	720	735	750	765	780	795	810	825	840	855	870	885									
Ala	Gln	Glu	Val	Ile	Asp	Arg	Cys	Trp	Gln	Leu	Gly	Gly	Lys	Asn	Pro	Ile	Thr	Val	Met	Val	Ala	Arg	Gly	Asn	Pro	Glu	Ile	Glu	Arg	Arg									
490	505	520	535	550	565	580	595	610	625	640	655	670	685	700	715	730	745	760	775	790	805	820	835	850	865	880	895	910	925	940									
Ile	Ile	Ser	Ile	His	Asp	Val	Gly	Ala	Gly	Gly	Leu	Ser	Ile	Leu	Glu	Lys	Asp	Ala	Phe	Val	Ala	Arg	Gly	Asn	Pro	Glu	Ile	Glu	Arg	Arg									
495	510	525	540	555	570	585	600	615	630	645	660	675	690	705	720	735	750	765	780	795	810	825	840	855	870	885	900	915	930	945									
Pro	Glu	Leu	Val	Asn	Asp	Ala	Arg	Arg	Gly	Ala	Val	Phe	Lys	Leu	Arg	Val	Trp	Cys	Leu	Arg	Val	Ala	Arg	Gly	Asn	Pro	Glu	Ile	Glu	Arg									
500	515	530	545	560	575	590	605	620	635	650	665	680	695	710	725	740	755	770	785	800	815	830	845	860	875	890	905	920	935	950									
Glu	Val	Pro	Leu	Glu	Glu	His	Gly	Leu	Asn	Pro	Leu	Glu	Lys	Asp	Ala	Val	Trp	Cys	Leu	Arg	Val	Ala	Arg	Gly	Asn	Pro	Glu	Ile	Glu	Arg									
505	520	535	550	565	580	595	610	625	640	655	670	685	700	715	730	745	760	775	790	805	820	835	850	865	880	895	910	925	940	955									
Asn	Glu	Ser	Gln	Glu	Arg	Tyr	Val	Leu	Ser	Ile	Leu	Glu	Lys	Asp	Ala	Val	Trp	Cys	Leu	Arg	Val	Ala	Arg	Gly	Asn	Pro	Glu	Ile	Glu	Arg									
540	555	570	585	600	615	630	645	660	675	690	705	720	735	750	765	780	795	810	825	840	855	870	885	900	915	930	945	960	975	990									
Asp	Ala	Phe	Arg	Ala	Ile	Cys	Glu	Arg	Glu	Arg	Cys	Pro	Phe	Ala	Val	Trp	Cys	Leu	Arg	Val	Ala	Arg	Gly	Asn	Pro	Glu	Ile	Glu	Arg	Arg									
545	560	575	590	605	620	635	650	665	680	695	710	725	740	755	770	785	800	815	830	845	860	875	890	905	920	935	950	965	980	995									
Val	Gly	Thr	Ala	Thr	Asp	Asp	Gly	His	Leu	Lys	Val	Arg	Asp	Ala	Val	Trp	Cys	Leu	Arg	Val	Ala	Arg	Gly	Asn	Pro	Glu	Ile	Glu	Arg	Arg									
550	565	580	595	610	625	640	655	670	685	700	715	730	745	760	775	790	805	820	835	850	865	880	895	910	925	940	955	970	985	1000									
Phe	Ala	Asn	Asn	Pro	Val	Asp	Leu	Pro	Leu	Asn	Val	Leu	Leu	Gly	Lys	Val	Trp	Cys	Leu	Arg	Val	Ala	Arg	Gly	Asn	Pro	Glu	Ile	Glu	Arg									
555	570	585	600	615	630	645	660	675	690	705	720	735	750	765	780	795	810	825	840	855	870	885	900	915	930	945	960	97											

Gln Asp Gly Glu Glu Lys Lys Ser Val Val Ser Pro Leu Ser Leu Ile
 785 790 795 800
 Ile Ser Ala Phe Ala Pro Val Lys Asp Val Arg Lys Thr Val Thr Pro
 805 810 815
 Glu Leu Lys Asn Val Glu Asp Ser Val Leu Leu Phe Val Asp Leu Gly
 820 825 830
 Phe Gly Lys Ala Arg Met Gly Gly Ser Ala Phe Gly Gln Val Tyr Asn
 835 840 845
 Asn Met Ser Gly Asp Ala Pro Asp Leu Asp Asp Thr Gly Arg Leu Lys
 850 855 860
 Ala Phe Tyr Ser Val Ile Gln Gln Leu Val Ala Glu Asn Lys Leu Leu
 865 870 875 880
 Ala Tyr His Asp Arg Ser Asp Gly Gly Leu Phe Ala Val Leu Val Glu
 885 890 895
 Met Ala Phe Ala Gly Arg Cys Gly Leu Asp Ile Asp Leu Asn Leu Leu
 900 905 910
 Leu Ala Gln Thr Phe Ile Thr Asn His Thr Ala Leu Ser Gln Ser Leu
 915 920 925
 Arg Thr Glu Glu Val Lys Ala Leu Ala Glu Trp Gln Glu Thr Ile Ala
 930 935 940
 Arg Thr Leu Phe Asn Glu Glu Leu Gly Ala Val Ile Gln Val Arg Lys
 945 950 955 960
 Gln Asp Val Ala Asp Ile Ile Asn Leu Phe Tyr Gln Gln Gln Leu His
 965 970 975
 His Asn Val Phe Glu Ile Gly Thr Leu Thr Asp Glu Asn Thr Leu Ile
 980 985 990
 Ile Arg Asp Gly Gln Thr His Leu Ile Ser Asp Asn Leu Ile Lys Leu
 995 1000 1005
 Gln Gln Thr Trp Gln Glu Thr Ser His Gln Ile Gln Arg Leu Arg Asp
 1010 1015 1020
 Asn Pro Ala Cys Ala Asp Ser Glu Phe Ala Leu Ile Gly Asp Asn Glu
 1025 1030 1035 1040
 Arg Ser Ala Leu Phe Ala Asp Val Lys Phe Asp Val Asn Glu Asp Ile
 1045 1050 1055
 Ala Ala Pro Phe Ile Asn Ser Gly Ala Lys Pro Lys Ile Ala Ile Leu
 1060 1065 1070
 Arg Glu Gln Gly Val Asn Gly Gln Ile Glu Met Ala Ala Ala Phe Thr
 1075 1080 1085
 Arg Ala Gly Phe Asp Ala Tyr Asp Val His Met Ser Asp Leu Met Ala
 1090 1095 1100
 Gly Arg Ile His Leu Ala Asp Phe Lys Met Leu Ala Ala Cys Gly Gly
 1105 1110 1115 1120

Phe Ser Tyr Gly Asp Val Leu Gly Ala Gly Glu Gly Trp Ala Lys Ser
 1125 1130 1135
 Ile Leu Phe His Pro Ala Leu Arg Asp Gln Phe Ala Ala Phe Phe Ala
 1140 1145 1150
 Asp Pro Asp Thr Leu Thr Leu Gly Val Cys Asn Gly Cys Gln Met Val
 1155 1160 1165
 Ser Asn Leu Ala Glu Ile Ile Pro Gly Thr Ala Gly Trp Pro Lys Phe
 1170 1175 1180
 Lys Arg Asn Leu Ser Glu Gln Phe Glu Ala Arg Leu Ser Met Val His
 1185 1190 1195 1200
 Val Pro Lys Ser Ala Ser Leu Ile Leu Asn Glu Met Gln Gly Ser Ser
 1205 1210 1215
 Leu Pro Val Val Val Ser His Gly Glu Gly Arg Ala Asp Phe Ala Leu
 1220 1225 1230
 His Gly Gly Asn Ile Ser Ala Asp Leu Gly Ile Ala Leu Gln Tyr Ile
 1235 1240 1245
 Asp Gly Gln Asn Gln Val Thr Gln Thr Tyr Pro Leu Asn Pro Asn Gly
 1250 1255 1260
 Ser Pro Gln Gly Ile Ala Gly Val Thr Asn Ala Asp Gly Arg Ile Thr
 1265 1270 1275 1280
 Ile Met Met Pro His Pro Glu Arg Val Tyr Arg Ala Ala Gln Met Ser
 1285 1290 1295
 Trp Lys Pro Glu Gly Trp Thr Glu Leu Ser Gly Trp Tyr Arg Leu Phe
 1300 1305 1310
 Ala Gly Ala Arg Lys Ala Leu Gly
 1315 1320

<210> 193
 <211> 302
 <212> PRT
 <213> Neisseria meningitidis

<400> 193
 Met Asn Gln Thr Ala Ile Asn Arg Ala Asp Val Arg Thr Arg Phe Ile
 1 5 10 15
 Phe Asp Asp Met Pro Val Arg Gly Leu His Val Arg Leu Glu Asn Val
 20 25 30
 Trp Gln His Ile Val Lys Gln Lys Asn Tyr Pro Ala Ala Ile Arg Arg
 35 40 45
 Ala Leu Gly Glu Leu Leu Ala Ala Gly Val Leu Leu Ser Gly Asn Leu
 50 55 60
 Lys Asn Glu Gly Thr Leu Ile Val Gln Val Gln Gly Arg Gly Arg Leu
 65 70 75 80
 Lys Met Leu Val Ala Glu Ala Ala Ser Asp Arg Thr Val Arg Ala Thr
 85 90 95
 Ala Arg Trp Asp Glu Thr Ala Glu Ile Ala Asp Asp Glu Ser Leu Gly

	100		105	258		110									
Asp	Leu	Leu	Gly	Glu	Gly	Gly	Val	Phe	Val	Leu	Thr	Leu	Gln	Pro	Lys
		115					120					125			
Asp	Gly	Glu	Pro	Trp	Gln	Gly	Val	Val	Pro	Leu	Glu	Gly	Gly	Gly	Ile
	130					135					140				
Ala	Gln	Met	Leu	Val	Asn	Tyr	Met	Lys	Arg	Ser	Glu	Gln	Leu	Asp	Thr
145					150					155					160
His	Ile	Val	Leu	Ser	Ala	Ser	Asp	Glu	Ala	Ala	Gly	Gly	Leu	Leu	Val
				165					170					175	
Gln	Arg	Leu	Pro	Glu	Glu	Val	Leu	Asp	Glu	Glu	Ala	Trp	Glu	His	Val
			180					185					190		
Ser	Thr	Leu	Ala	Arg	Thr	Leu	Thr	Ala	Glu	Glu	Leu	Ala	Gly	Leu	Asp
		195					200					205			
Ala	Gln	His	Val	Leu	Tyr	Arg	Leu	Phe	His	Glu	Thr	Pro	Pro	Arg	Val
	210					215					220				
Phe	Glu	Pro	Glu	Thr	Phe	Glu	Phe	Ser	Cys	Thr	Cys	Ser	Arg	Gly	Lys
225					230					235					240
Val	Ser	Asp	Met	Leu	Leu	Met	Leu	Gly	Gly	Glu	Glu	Val	Gly	Gly	Val
			245						250					255	
Val	Val	Glu	Gln	Gly	Ser	Ile	Glu	Val	Asp	Cys	Asp	Phe	Cys	His	Ser
			260					265					270		
Lys	Tyr	Val	Phe	Asp	Glu	Thr	Asp	Val	Asn	Ala	Leu	Phe	Gly	Glu	Asp
		275					280					285			
Val	Val	Gly	Val	Ala	Lys	Gly	Leu	Pro	Arg	His	Thr	Val	Gln		
	290					295					300				

<210> 194
 <211> 331
 <212> PRT
 <213> Neisseria meningitidis

<400>	194														
Met	Lys	Lys	Ser	Leu	Ile	Ala	Leu	Thr	Leu	Ala	Ala	Leu	Pro	Val	Ala
1				5					10					15	
Ala	Met	Ala	Asp	Val	Thr	Leu	Tyr	Gly	Thr	Ile	Lys	Ala	Gly	Val	Glu
			20					25					30		
Thr	Ser	Arg	Ser	Val	Phe	His	Gln	Asn	Gly	Gln	Val	Thr	Glu	Val	Thr
		35					40					45			
Thr	Ala	Thr	Gly	Ile	Val	Asp	Leu	Gly	Ser	Lys	Ile	Gly	Phe	Lys	Gly
	50					55					60				
Gln	Glu	Asp	Leu	Gly	Asn	Gly	Leu	Lys	Ala	Ile	Trp	Gln	Val	Glu	Gln
65					70					75				80	
Lys	Ala	Ser	Ile	Ala	Gly	Thr	Asp	Ser	Gly	Trp	Gly	Asn	Arg	Gln	Ser
				85					90					95	
Phe	Ile	Gly	Leu	Lys	Gly	Gly	Phe	Gly	Lys	Leu	Arg	Val	Gly	Arg	Leu
			100					105					110		

Asn Ser Val₁₁₅ Leu Lys Asp Thr Gly₁₂₀ Asp Ile Asn Pro Trp₁₂₅ Asp Ser Lys
 Ser Asp Tyr Leu Gly Val₁₃₅ Asn Lys Ile Ala Glu Pro₁₄₀ Glu Ala Arg Leu
 Ile Ser Val Arg Tyr Asp₁₅₀ Ser Pro Glu Phe Ala Gly Leu Ser Gly Ser₁₆₀
 Val Gln Tyr Ala Leu₁₆₅ Asn Asp Asn Ala Gly₁₇₀ Arg His Asn Ser Glu Ser₁₇₅
 Tyr His Ala Gly₁₈₀ Phe Asn Tyr Lys Asn₁₈₅ Gly Gly Phe Phe Val₁₉₀ Gln Tyr
 Gly Gly Ala Tyr Lys Arg His His₂₀₀ Gln Val Gln Glu Gly₂₀₅ Leu Asn Ile
 Glu Lys Tyr Gln Ile His Arg₂₁₅ Leu Val Ser Gly Tyr₂₂₀ Asp Asn Asp Ala
 Leu Tyr Ala Ser Val₂₃₀ Ala Val Gln Gln Gln Asp₂₃₅ Ala Lys Leu Thr Asp₂₄₀
 Ala Ser Asn Ser His₂₄₅ Asn Ser Gln Thr Glu Val Ala Ala Thr Leu Ala₂₅₅
 Tyr Arg Phe Gly₂₆₀ Asn Val Thr Pro Arg₂₆₅ Val Ser Tyr Ala His₂₇₀ Gly Phe
 Lys Gly Leu Val Asp Asp Ala Asp₂₈₀ Ile Gly Asn Glu Tyr₂₈₅ Asp Gln Val
 Val Val Gly Ala Glu Tyr Asp₂₉₅ Phe Ser Lys Arg Thr₃₀₀ Ser Ala Leu Val
 Ser Ala Gly Trp Leu Gln₃₁₀ Glu Gly Lys Gly Glu₃₁₅ Asn Lys Phe Val Ala₃₂₀
 Thr Ala Gly Gly Val₃₂₅ Gly Leu Arg His Lys₃₃₀ Phe

<210> 195

<211> 143

<212> PRT

<213> Neisseria meningitidis

<400> 195

Met Lys Thr Phe Ser Ala Lys Pro His Glu Val Lys Arg Glu Trp Phe
1 5 10 15

Val Ile Asp Ala Gln Asp Lys Val Leu Gly Arg Val Ala Ala Glu Val
20 25 30

Ala Ser Arg Leu Arg Gly Lys His Lys Pro Glu Tyr Thr Pro His Val
35 40 45

Asp Thr Gly Asp Tyr Ile Ile Val Ile Asn Ala Asp Lys Leu Arg Val
50 55 60

Thr Gly Ala Lys Phe Glu Asp Lys Lys Tyr Phe Arg His Ser Gly Phe
65 70 75 80

Pro Gly Gly Ile Tyr Glu Arg Thr Phe Arg Glu Met Gln Glu Gln Phe
85 90 95
Pro Gly Arg Ala Leu Glu Gln Ala Val Lys Gly Met Leu Pro Lys Gly
100 105 110
Pro Leu Gly Tyr Ala Met Ile Lys Lys Leu Lys Val Tyr Ala Gly Ala
115 120 125
Glu His Ala His Ala Ala Gln Gln Pro Lys Val Leu Glu Leu Lys
130 135 140

<210> 196
<211> 371
<212> PRT
<213> Neisseria meningitidis

<400> 196
Met Lys Val Gly Phe Val Gly Trp Arg Gly Met Val Gly Ser Val Leu
1 5 10 15
Met Gln Arg Met Lys Glu Glu Asn Asp Phe Ala His Ile Pro Glu Ala
20 25 30
Phe Phe Phe Thr Thr Ser Asn Val Gly Gly Ala Ala Pro Asp Phe Gly
35 40 45
Gln Ala Ala Lys Thr Leu Leu Asp Ala Asn Asn Val Ala Glu Leu Ala
50 55 60
Lys Met Asp Ile Ile Val Thr Cys Gln Gly Gly Asp Tyr Thr Lys Ser
65 70 75 80
Val Phe Gln Ala Leu Arg Asp Ser Gly Trp Asn Gly Tyr Trp Ile Asp
85 90 95
Ala Ala Ser Ser Leu Arg Met Lys Asp Asp Ala Ile Ile Val Leu Asp
100 105 110
Pro Val Asn Arg Asp Val Leu Asp Asn Gly Leu Lys Asn Gly Val Lys
115 120 125
Asn Tyr Ile Gly Gly Asn Cys Thr Val Ser Leu Met Leu Met Ala Leu
130 135 140
Gly Gly Leu Phe Gln Asn Asp Leu Val Glu Trp Ala Thr Ser Met Thr
145 150 155 160
Tyr Gln Ala Ala Ser Gly Ala Gly Ala Lys Asn Met Arg Glu Leu Ile
165 170 175
Ser Gly Met Gly Ala Val His Ala Gln Val Ala Asp Ala Leu Ala Asp
180 185 190
Pro Ala Gly Ser Ile Leu Asp Ile Asp Arg Lys Val Ser Asp Phe Leu
195 200 205
Arg Ser Glu Asp Tyr Pro Lys Ala Asn Phe Gly Val Pro Leu Ala Gly
210 215 220
Ser Leu Ile Pro Trp Ile Asp Val Asp Leu Gly Asn Gly Gln Ser Lys
225 230 235 240
Glu Glu Trp Lys Gly Gly Val Glu Thr Asn Lys Ile Leu Gly Arg Ser

Thr Ala Val Ser Ala Ala Arg Pro Lys Ile Ala Asn Tyr Pro Phe Thr
 180 185 190
 Thr Leu His Pro Asn Leu Gly Val Val Arg Ile Asp Glu Asn His Ser
 195 200 205
 Phe Val Met Ala Asp Ile Pro Gly Leu Ile Glu Gly Ala Ala Glu Gly
 210 215 220
 Ala Gly Leu Gly His Arg Phe Leu Lys His Leu Ser Arg Thr Gly Leu
 225 230 235 240
 Leu Leu His Val Val Asp Leu Ala Pro Phe Asp Glu Thr Val Asn Pro
 245 250 255
 Ala Glu Glu Ala Leu Ala Ile Ile Asn Glu Leu Arg Lys Tyr Asp Glu
 260 265 270
 Glu Leu Tyr Gly Lys Pro Arg Trp Leu Val Leu Asn Lys Leu Asp Met
 275 280 285
 Leu Asp Glu Glu Glu Ala Gln Thr Arg Thr Ala Ala Phe Leu Glu Ala
 290 295 300
 Val Gly Trp Asp Tyr Pro Lys Pro Asp Asp Arg Phe Gln Phe Asp Met
 305 310 315 320
 Glu Thr Pro Arg Leu Phe Gln Ile Ser Ala Leu Thr His Gln Gly Thr
 325 330 335
 Gln Glu Leu Val His Gln Ile Asn Gln Tyr Leu Thr Glu Lys Lys Arg
 340 345 350
 Ile Glu Ala Glu Lys Ala Glu Ala Glu Lys Ala Ala Ala Asn Val Glu
 355 360 365
 Ile Ile Glu Gln Gln Pro Lys Thr Asp Thr Gly Val Phe Lys Pro Glu
 370 375 380

<210> 198
 <211> 242
 <212> PRT
 <213> Neisseria meningitidis

<400> 198
 Met Ser Gln Ile Thr Met Arg Gln Met Ile Glu Ala Gly Val His Phe
 1 5 10 15
 Gly His Gln Thr Arg Phe Trp Asn Pro Lys Met Ala Gln Tyr Ile Phe
 20 25 30
 Gly Ala Arg Asn Lys Ile His Ile Val Asn Leu Glu Lys Thr Leu Pro
 35 40 45
 Met Phe Gln Asp Ala Gln Glu Ala Val Arg Arg Leu Val Ala Asn Lys
 50 55 60
 Gly Thr Val Leu Phe Val Gly Thr Lys Arg Gln Ala Arg Asp Ile Ile
 65 70 75 80
 Arg Glu Glu Ala Thr Arg Ala Gly Met Pro Phe Val Asp Tyr Arg Trp
 85 90 95

Leu Gly Gly Met Leu Thr Asn Tyr Lys Thr Val Lys Gln Ser Ile Lys
 100 105 110
 Arg Leu Glu Glu Lys Thr Ala Ala Leu Glu Asn Ala Ala Glu Ser Gly
 115 120 125
 Phe Ser Lys Lys Glu Ile Leu Glu Met Gln Arg Asp Val Glu Lys Leu
 130 135 140
 Glu Arg Ser Leu Gly Gly Ile Lys Asn Met Lys Gly Leu Pro Asp Ala
 145 150 155 160
 Ile Phe Val Ile Asp Thr Gly Tyr Gln Lys Gly Thr Leu Val Glu Ala
 165 170 175
 Glu Lys Leu Gly Ile Pro Val Ile Ala Val Val Asp Thr Asn Asn Ser
 180 185 190
 Pro Asp Gly Val Lys Tyr Val Ile Pro Gly Asn Asp Asp Ser Ala Lys
 195 200 205
 Ala Ile Arg Leu Tyr Cys Arg Gly Ile Ala Asp Ala Val Leu Glu Gly
 210 215 220
 Lys Asn Gln Ala Leu Gln Glu Thr Val Ala Ala Ala Gln Glu Ala Ala
 225 230 235 240
 Ala Glu

<210> 199
 <211> 284
 <212> PRT
 <213> Neisseria meningitidis

<400> 199
 Met Ala Glu Ile Thr Ala Lys Met Val Ala Asp Leu Arg Ala Ala Thr
 1 5 10 15
 Gly Leu Gly Met Met Glu Cys Lys Lys Ala Leu Val Glu Ala Glu Gly
 20 25 30
 Asn Phe Asp Lys Ala Glu Glu Ile Leu Arg Ile Lys Ser Gly Ala Lys
 35 40 45
 Ala Gly Lys Leu Ala Gly Arg Thr Ala Ala Glu Gly Val Leu Ala Tyr
 50 55 60
 Ala Ile Asn Gly Asn Val Gly Ala Leu Val Glu Val Asn Cys Glu Thr
 65 70 75 80
 Asp Phe Val Ala Lys Asp Ala Gly Phe Val Glu Phe Ala Asn Phe Val
 85 90 95
 Ala Lys Thr Ala Ala Glu Lys Lys Pro Ala Ser Val Glu Glu Leu Ser
 100 105 110
 Glu Leu Val Glu Ala Glu Arg Lys Ala Ile Ile Ala Lys Leu Gly Glu
 115 120 125
 Asn Met Ser Val Arg Arg Phe Gln Val Ile Asp Thr Ala Asn Gln Leu
 130 135 140

val Ala Tyr Ile His Gly Ala Leu Ala Thr ²⁶⁴ Glu Gly Val Leu val Glu
 145 150 155 160
 Tyr Lys Gly Ser Glu Asp Val Ala Arg Lys Ile Gly Met His Ile val
 165 170 175
 Ala Ala Lys Pro Gln Cys Val Ser Glu Ala Glu Val Asp Ala Glu Thr
 180 185 190
 val Glu Lys Glu Arg His Ile Tyr Thr Glu Gln Ala Ile Ala Ser Gly
 195 200 205
 Lys Pro Ala Asp Ile Ala Ala Lys Met Val Glu Gly Arg Ile Arg Lys
 210 215 220
 Phe Leu Ala Glu Ile Thr Leu Asn Gly Gln Ala Phe Val Met Asn Pro
 225 230 235 240
 Asp Gln Thr Val Ala Gln Phe Ser Lys Glu Asn Gly Thr Glu Val Ile
 245 250 255
 Ser Phe Val Arg Tyr Lys Val Gly Asp Gly Ile Glu Lys Lys Ala Val
 260 265 270
 Asp Tyr Ala Ala Glu Val Ala Ala Ala Lys Val
 275 280

<210> 200
 <211> 239
 <212> PRT
 <213> Neisseria meningitidis

<400> 200
 Met Thr Gln Gln Ile Lys Tyr Lys Arg Val Leu Leu Lys Leu Ser Gly
 1 5 10 15
 Glu Ser Leu Met Gly Ser Asp Pro Phe Gly Ile Asn His Asp Thr Ile
 20 25 30
 val Gln Thr Val Gly Glu Ile Ala Glu Val Val Lys Met Gly Val Gln
 35 40 45
 val Gly Ile Val Val Gly Gly Gly Asn Ile Phe Arg Gly Val Ser Ala
 50 55 60
 Gln Ala Gly Ser Met Asp Arg Ala Thr Ala Asp Tyr Met Gly Met Met
 65 70 75 80
 Ala Thr Val Met Asn Ala Leu Ala Leu Lys Asp Ala Phe Glu Thr Leu
 85 90 95
 Gly Ile Lys Ala Arg Val Gln Ser Ala Leu Ser Met Gln Gln Ile Ala
 100 105 110
 Glu Thr Tyr Ala Arg Pro Lys Ala Ile Gln Tyr Leu Glu Glu Gly Lys
 115 120 125
 val val Ile Phe Ala Ala Gly Thr Gly Asn Pro Phe Phe Thr Thr Asp
 130 135 140
 Thr Ala Ala Ala Leu Arg Gly Ala Glu Met Asn Cys Asp Val Met Leu
 145 150 155 160
 Lys Ala Thr Asn Val Asp Gly Val Tyr Thr Ala Asp Pro Lys Lys Asp

				165					170	265			175		
Pro	Ser	Ala	Thr	Arg	Tyr	Glu	Thr	Ile	Thr	Phe	Asp	Glu	Ala	Leu	Leu
			180					185					190		
Lys	Asn	Leu	Lys	Val	Met	Asp	Ala	Thr	Ala	Phe	Ala	Leu	Cys	Arg	Glu
		195					200					205			
Arg	Lys	Leu	Asn	Ile	Val	Val	Phe	Gly	Ile	Ala	Lys	Glu	Gly	Ser	Leu
	210					215					220				
Lys	Arg	Val	Ile	Thr	Gly	Glu	Asp	Glu	Gly	Thr	Leu	Val	His	Cys	
225					230					235					

<210> 201
 <211> 447
 <212> PRT
 <213> Neisseria meningitidis

<400>	201														
Met	Ser	Gln	Asn	His	Thr	Ile	Leu	Gln	Ser	Leu	Pro	Val	Gly	Gln	Lys
1				5					10					15	
Val	Gly	Ile	Ala	Phe	Ser	Gly	Gly	Leu	Asp	Thr	Ser	Ala	Ala	Leu	Leu
			20					25					30		
Trp	Met	Lys	Leu	Lys	Gly	Ala	Leu	Pro	Tyr	Ala	Tyr	Thr	Ala	Asn	Leu
		35					40					45			
Gly	Gln	Pro	Asp	Glu	Asp	Asp	Tyr	Asn	Ala	Ile	Pro	Lys	Lys	Ala	Met
		50				55					60				
Glu	Tyr	Gly	Ala	Glu	Asn	Ala	Arg	Leu	Ile	Asp	Cys	Arg	Ala	Gln	Leu
65					70					75					80
Ala	His	Glu	Gly	Ile	Ala	Ala	Ile	Gln	Cys	Gly	Ala	Phe	His	Val	Ser
				85					90					95	
Thr	Gly	Gly	Ile	Ala	Tyr	Phe	Asn	Thr	Thr	Pro	Leu	Gly	Arg	Ala	Val
			100					105					110		
Thr	Gly	Thr	Met	Leu	Val	Ser	Ala	Met	Lys	Glu	Asp	Asp	Val	Asn	Ile
		115					120					125			
Trp	Gly	Asp	Gly	Ser	Thr	Tyr	Lys	Gly	Asn	Asp	Ile	Glu	Arg	Phe	Tyr
	130					135					140				
Arg	Tyr	Gly	Leu	Leu	Thr	Asn	Pro	Ala	Leu	Lys	Ile	Tyr	Lys	Pro	Trp
145					150					155					160
Leu	Asp	Gln	Gln	Phe	Ile	Asp	Glu	Leu	Gly	Gly	Arg	His	Glu	Met	Ser
				165					170					175	
Glu	Phe	Leu	Ile	Ala	Asn	Gly	Phe	Asn	Tyr	Lys	Met	Ser	Val	Glu	Lys
			180					185					190		
Ala	Tyr	Ser	Thr	Asp	Ser	Asn	Met	Leu	Gly	Ala	Thr	His	Glu	Ala	Lys
		195					200					205			
Asp	Leu	Glu	Phe	Leu	Asn	Ser	Gly	Ile	Lys	Ile	Val	Lys	Pro	Ile	Met
	210					215					220				
Gly	Val	Ala	Phe	Trp	Asp	Glu	Asn	Val	Glu	Val	Ser	Pro	Glu	Glu	Val
225					230					235					240

Ser Val Arg Phe Glu Glu Gly Val Pro Val Ala Leu Asn Gly Lys Glu
 245 250 255
 Tyr Ala Asp Pro Val Glu Leu Phe Leu Glu Ala Asn Arg Ile Gly Gly
 260 265 270
 Arg His Gly Leu Gly Met Ser Asp Gln Ile Glu Asn Arg Ile Ile Glu
 275 280 285
 Ala Lys Ser Arg Gly Ile Tyr Glu Ala Pro Gly Met Ala Leu Phe His
 290 295 300
 Ile Ala Tyr Glu Arg Leu Val Thr Gly Ile His Asn Glu Asp Thr Ile
 305 310 315 320
 Glu Gln Tyr Arg Ile Asn Gly Leu Arg Leu Gly Arg Leu Leu Tyr Gln
 325 330 335
 Gly Arg Trp Phe Asp Ser Gln Ala Leu Met Leu Arg Glu Thr Ala Gln
 340 345 350
 Arg Trp Val Ala Lys Ala Val Thr Gly Glu Val Thr Leu Glu Leu Arg
 355 360 365
 Arg Gly Asn Asp Tyr Ser Ile Leu Asn Thr Glu Ser Pro Asn Leu Thr
 370 375 380
 Tyr Gln Pro Glu Arg Leu Ser Met Glu Lys Val Glu Asp Ala Ala Phe
 385 390 395 400
 Thr Pro Leu Asp Arg Ile Gly Gln Leu Thr Met Arg Asn Leu Asp Ile
 405 410 415
 Thr Asp Thr Arg Val Lys Leu Gly Ile Tyr Ser Gln Ser Gly Leu Leu
 420 425 430
 Ser Leu Gly Glu Gly Ser Val Leu Pro Gln Leu Gly Asn Lys Gln
 435 440 445
 <210> 202
 <211> 367
 <212> PRT
 <213> Neisseria meningitidis
 <400> 202
 Met Glu Ala Glu Val Ile Asn Gln Leu Asn Asn Thr Leu Asn Asp Leu
 1 5 10 15
 Glu Lys Arg Ser Glu Asp Ile Arg Val Tyr Met Asp Tyr Gln Gly Lys
 20 25 30
 Lys Asp Arg Leu Glu Glu Val Ile Gly Leu Ser Glu Asp Pro Glu Leu
 35 40 45
 Trp Asn Asp Pro Lys Arg Ala Gln Glu Ile Gly Lys Glu Arg Lys Ile
 50 55 60
 Leu Glu Gly Ile Val Leu Thr Leu Asp Asn Ile Ala Ser Gly Ile Glu
 65 70 75 80
 Asp Asn Arg Met Leu Ile Glu Met Thr Val Glu Glu Asn Asp Glu Glu
 85 90 95

Gly Phe Ala Ala Val Gln Glu Asp Val Ala Gly Leu Glu Lys Gln Met
 100 105 267 110
 Ala Asp Leu Glu Phe Lys Arg Met Phe Asn Gln Pro Ala Asp Pro Asn
 115 120 125
 Asn Cys Phe Ile Asp Ile Thr Ala Gly Ala Gly Gly Thr Glu Ala Glu
 130 135 140
 Asp Trp Ala Gly Met Leu Phe Arg Met Tyr Ser Arg Tyr Ala Glu Arg
 145 150 155 160
 Lys Gly Phe Arg Ile Glu Ile Leu Glu Glu Asp Asp Gly Glu Ile Ala
 165 170 175
 Gly Ile Asn Arg Ala Thr Ile Arg Val Glu Gly Glu Tyr Ala Tyr Gly
 180 185 190
 Leu Leu Arg Thr Glu Thr Gly Val His Arg Leu Val Arg Tyr Ser Pro
 195 200 205
 Phe Asp Ser Asn Asn Lys Arg His Thr Ser Phe Ala Ser Val Phe Val
 210 215 220
 Tyr Pro Glu Ile Asp Asp Ser Ile Glu Ile Glu Ile Asn Pro Ala Asp
 225 230 235 240
 Leu Arg Ile Asp Thr Tyr Arg Ala Ser Gly Ala Gly Gly Gln His Ile
 245 250 255
 Asn Lys Thr Asp Ser Ala Val Arg Ile Thr His Glu Pro Thr Gly Ile
 260 265 270
 Val Val Gln Cys Gln Asn Asp Arg Ser Gln His Ala Asn Lys Ala Ala
 275 280 285
 Ala Met Glu Met Leu Lys Ser Lys Leu Tyr Glu Leu Glu Met Arg Lys
 290 295 300
 Arg Asn Glu Glu Lys Gln Ala Leu Glu Glu Gly Lys Ser Asp Val Gly
 305 310 315 320
 Trp Gly Ser Gln Ile Arg Ser Tyr Val Leu Asp Ser Ser Arg Ile Lys
 325 330 335
 Asp Leu Arg Thr Gly Tyr Glu Val Gly Asn Thr Lys Ala Val Leu Asp
 340 345 350
 Gly Asp Leu Asp Gly Phe Ile Glu Ala Ser Leu Lys Gln Gly Val
 355 360 365

<210> 203

<211> 311

<212> PRT

<213> Neisseria meningitidis

<400> 203

Met Ser Val Leu Ile Ile Val Glu His Asp Asn Lys Gln Leu Asn Pro
1 5 10 15

Thr Thr Leu His Ala Val Thr Ala Ala Lys Leu Gly Lys Val Asp
20 25 30

Leu Leu Val Ala Gly Asn Gly Ala Ser Ala Val Val Glu Phe Ala Lys

	35		40		268		45
Gln	Val	Ala	Gly	Val	Lys	Lys	Val
50					55		
Ala	Glu	Gly	Leu	Ala	Glu	Glu	Leu
65					70		
Ala	Asp	Tyr	Arg	Tyr	Val	Ala	Ala
				85			
Leu	Leu	Pro	Arg	Val	Ala	Ala	Leu
			100				105
Leu	Thr	Glu	Ile	Val	Asp	Asn	Thr
		115				120	
Gly	Asn	Ala	Phe	Glu	Thr	Val	Gln
130						135	
Thr	Phe	Arg	Ala	Thr	Val	Phe	Asp
145						150	
Ala	Glu	Val	Ile	Asn	Val	Glu	Ala
				165			
Phe	Val	Asn	Arg	Gln	Leu	Ser	His
			180				185
Ala	Lys	Val	Ile	Val	Ser	Gly	Gly
		195					200
Phe	Asn	Glu	Val	Leu	Thr	Pro	Leu
210						215	
Gly	Ala	Ser	Arg	Ala	Ala	Val	Asp
225					230		
Gln	Val	Gly	Gln	Thr	Gly	Lys	Val
				245			
Ile	Gly	Ile	Ser	Gly	Ala	Ile	Gln
			260				265
Lys	Val	Ile	Val	Ala	Ile	Asn	Lys
		275					280
Val	Ala	Asp	Tyr	Gly	Leu	Val	Gly
					295		
Leu	Thr	Glu	Val	Leu	Lys	Asn	
305					310		

<210> 204
 <211> 249
 <212> PRT
 <213> Neisseria meningitidis

<400> 204
 Met Lys Ala Leu Val Ala Val Lys Arg Val Val Asp Tyr Asn Val Lys
 1 5 10 15
 Val Arg Val Lys Ala Asp Gly Ser Asp Val Asp Ile Gly Asn Val Lys
 20 25 30

Met Ser Met Asn Pro Phe Asp Glu Ile Ala Val Glu Glu Ala Val Arg
 35 40 45
 Leu Lys Glu Ala Gly Lys Val Ser Glu Ile Val Ala Val Ser Leu Gly
 50 55 60
 Glu Lys Lys Cys Glu Glu Thr Leu Arg Thr Ala Leu Ala Met Gly Ala
 65 70 75 80
 Asp Arg Ala Ile His Val Glu Thr Asp Thr Lys Leu Glu Ser Leu Ala
 85 90 95
 Val Ala Lys Leu Leu Lys Ala Val Ala Asp Lys Glu Asn Pro Gln Ile
 100 105 110
 Phe Phe Leu Gly Lys Gln Ala Ile Asp Asp Asp Ala Asn Gln Val Ala
 115 120 125
 Gln Met Leu Ala Ala Leu Leu Asn Ala Ala Gln Gly Thr Phe Ala Ser
 130 135 140
 Lys Val Gln Ile Glu Gly Asp Glu Val Gln Ile Val Arg Glu Ile Asp
 145 150 155 160
 Gly Gly Glu Glu Thr Ile Ala Leu Lys Leu Pro Ala Val Ile Ser Ala
 165 170 175
 Asp Leu Arg Leu Asn Glu Pro Arg Phe Val Lys Leu Pro Asn Ile Met
 180 185 190
 Ala Ala Lys Lys Lys Pro Leu Glu Lys Leu Thr Pro Asp Asp Leu Val
 195 200 205
 Ala Asp Ile Ser Pro Arg Leu Lys Thr Val Lys Phe Ala Glu Pro Lys
 210 215 220
 Ala Arg Gln Ala Gly Val Lys Val Ala Ser Val Ala Glu Leu Val Glu
 225 230 235 240
 Lys Leu Lys Asn Glu Ala Lys Val Ile
 245

<210> 205
 <211> 334
 <212> PRT
 <213> Neisseria meningitidis

<400> 205
 Met Ser Ile Lys Val Ala Ile Asn Gly Phe Gly Arg Ile Gly Arg Leu
 1 5 10 15
 Ala Leu Arg Gln Ile Glu Lys Ala His Asp Ile Glu Val Val Ala Val
 20 25 30
 Asn Asp Leu Thr Pro Ala Glu Met Leu Leu His Leu Phe Lys Tyr Asp
 35 40 45
 Ser Thr Gln Gly Arg Phe Gln Gly Thr Ala Glu Leu Lys Asp Asp Ala
 50 55 60
 Ile Val Val Asn Gly Lys Glu Ile Lys Val Phe Ala Asn Pro Asn Pro
 65 70 75 80

Glu Glu Leu Pro Trp Gly Glu Leu Gly Val Asp Val Ile Leu Glu Cys
 85 90 270 95
 Thr Gly Phe Phe Thr Asn Lys Thr Lys Ala Glu Ala His Ile Arg Ala
 100 105 110
 Gly Ala Arg Lys Val Val Ile Ser Ala Pro Gly Gly Asn Asp Val Lys
 115 120 125
 Thr Val Val Tyr Gly Val Asn Gln Asp Ile Leu Asp Gly Ser Glu Thr
 130 135 140
 Val Ile Ser Ala Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Met Ala
 145 150 155 160
 Ala Val Leu Gln Lys Glu Phe Gly Val Val Glu Gly Leu Met Thr Thr
 165 170 175
 Ile His Ala Tyr Thr Gly Asp Gln Asn Thr Leu Asp Ala Pro His Arg
 180 185 190
 Lys Gly Asp Leu Arg Arg Ala Arg Ala Ala Ala Leu Asn Ile Val Pro
 195 200 205
 Asn Ser Thr Gly Ala Ala Lys Ala Ile Gly Leu Val Ile Pro Glu Leu
 210 215 220
 Asn Gly Lys Leu Asp Gly Ser Ala Gln Arg Val Pro Val Ala Ser Gly
 225 230 235 240
 Ser Leu Thr Glu Leu Val Ser Ile Leu Glu Arg Pro Val Thr Lys Glu
 245 250 255
 Glu Ile Asn Ala Ala Met Lys Ala Ala Ala Ser Glu Ser Tyr Gly Tyr
 260 265 270
 Asn Glu Asp Gln Ile Val Ser Ser Asp Val Val Gly Ile Glu Tyr Gly
 275 280 285
 Ser Leu Phe Asp Ala Thr Gln Thr Arg Val Met Thr Val Gly Gly Lys
 290 295 300
 Gln Leu Val Lys Thr Val Ala Trp Tyr Asp Asn Glu Met Ser Tyr Thr
 305 310 315 320
 Cys Gln Leu Val Arg Thr Leu Glu Tyr Phe Ala Gly Lys Ile
 325 330

<210> 206
 <211> 223
 <212> PRT
 <213> Neisseria meningitidis

<400> 206
 Met Lys Thr Val Ser Thr Ala Val Val Leu Ala Ala Ala Ala Val Ser
 1 5 10 15
 Leu Thr Gly Cys Ala Thr Glu Ser Ser Arg Ser Leu Glu Val Glu Lys
 20 25 30
 Val Ala Ser Tyr Asn Thr Gln Tyr His Gly Val Arg Thr Pro Ile Ser
 35 40 45
 Val Gly Thr Phe Asp Asn Arg Ser Ser Phe Gln Lys Gly Ile Phe Ser

His Arg Leu Met Gln Arg Gln Ser Glu Leu Arg Lys Asp Gly Arg Leu
 145 150 155 160
 Pro Trp Leu Arg Pro Asp Ala Lys Ala Gln Leu Thr Val Val Tyr Asp
 165 170 175
 Ser Glu Thr Gly Lys Val Lys Arg Ile Asp Thr Val Val Leu Ser Thr
 180 185 190
 Gln His Asp Pro Ser Ile Ala Tyr Glu Glu Leu Lys Asn Ala Val Ile
 195 200 205
 Glu His Ile Ile Lys Pro Val Leu Pro Ser Glu Leu Leu Thr Asp Glu
 210 215 220
 Thr Lys Tyr Leu Ile Asn Pro Thr Gly Arg Phe Val Ile Gly Gly Pro
 225 230 235 240
 Gln Gly Asp Cys Gly Leu Thr Gly Arg Lys Ile Ile Val Asp Thr Tyr
 245 250 255
 Gly Gly Ala Ala Pro His Gly Gly Gly Ala Phe Ser Gly Lys Asp Pro
 260 265 270
 Ser Lys Val Asp Arg Ser Ala Ala Tyr Ala Cys Arg Tyr Val Ala Lys
 275 280 285
 Asn Ile Val Ala Ala Gly Leu Ala Thr Gln Cys Gln Ile Gln Val Ser
 290 295 300
 Tyr Ala Ile Gly Val Ala Glu Pro Thr Ser Ile Ser Ile Asp Thr Phe
 305 310 315 320
 Gly Thr Gly Lys Ile Ser Glu Glu Lys Leu Ile Ala Leu Val Arg Glu
 325 330 335
 His Phe Asp Leu Arg Pro Lys Gly Ile Val Gln Met Leu Asp Leu Leu
 340 345 350
 Arg Pro Ile Tyr Ser Lys Ser Ala Ala Tyr Gly His Phe Gly Arg Glu
 355 360 365
 Glu Pro Glu Phe Thr Trp Glu Arg Thr Asp Lys Ala Ala Ala Leu Arg
 370 375 380

Ala Ala Ala Gly Leu
385

<210> 208
 <211> 167
 <212> PRT
 <213> Neisseria meningitidis

<400> 208
 Met Ala Leu Leu Asn Ile Leu Gln Tyr Pro Asp Glu Arg Leu His Thr
 1 5 10 15
 Val Ala Lys Pro Val Glu Gln Val Asp Glu Arg Ile Arg Lys Leu Ile
 20 25 30
 Ala Asp Met Phe Glu Thr Met Tyr Glu Ser Arg Gly Ile Gly Leu Ala
 35 40 45

Ala Thr Gln Val Asp Val His Glu Arg Val Val Val Met Asp Leu Thr
 50 55 60 273
 Glu Asp Arg Ser Glu Pro Arg Val Phe Ile Asn Pro Val Ile Val Glu
 65 70 75 80
 Lys Asp Gly Glu Thr Thr Tyr Glu Glu Gly Cys Leu Ser Val Pro Gly
 85 90 95
 Ile Tyr Asp Thr Val Thr Arg Ala Glu Arg Val Lys Val Glu Ala Leu
 100 105 110
 Asn Glu Lys Gly Glu Lys Phe Thr Leu Glu Ala Asp Gly Leu Leu Ala
 115 120 125
 Ile Cys Val Gln His Glu Leu Asp His Leu Met Gly Ile Val Phe Val
 130 135 140
 Glu Arg Leu Ser Gln Leu Lys Gln Gly Arg Ile Lys Thr Lys Leu Lys
 145 150 155 160
 Lys Arg Gln Lys His Thr Ile
 165

<210> 209
 <211> 477
 <212> PRT
 <213> Neisseria meningitidis

<400> 209
 Met Ser Gln Tyr Asp Val Val Val Ile Gly Ala Gly Pro Gly Gly Tyr
 1 5 10 15
 Val Ala Ala Ile Arg Ala Ala Gln Leu Gly Phe Lys Thr Ala Cys Val
 20 25 30
 Asp Ala Gly Val Asn Lys Ala Gly Asn Ala Pro Ala Leu Gly Gly Thr
 35 40 45
 Cys Leu Asn Val Gly Cys Ile Pro Ser Lys Ala Leu Leu Gln Ser Ser
 50 55 60
 Glu His Phe His Ala Ala Gln His Glu Phe Ala Glu His Gly Ile Thr
 65 70 75 80
 Val Gly Asp Val Lys Phe Asp Ala Ala Lys Met Ile Glu Arg Lys Asp
 85 90 95
 Ala Ile Val Thr Lys Leu Thr Gly Gly Val Lys Phe Leu Phe Gln Lys
 100 105 110
 Asn Lys Val Thr Ser Leu Phe Gly Thr Ala Ser Phe Ala Gly Lys Asn
 115 120 125
 Gly Asp Ala Tyr Gln Ile Glu Val Asp Asn Lys Gly Glu Lys Thr Val
 130 135 140
 Ile Glu Ala Lys His Val Ile Val Ala Thr Gly Ser Val Pro Arg Pro
 145 150 155 160
 Leu Pro Gln Val Ala Ile Asp Asn Val Asn Val Leu Asp Asn Glu Gly
 165 170 175
 Ala Leu Asn Leu Thr Glu Val Pro Ala Lys Leu Gly Val Ile Gly Ser

180										185					274					190				
Gly	Val	Ile	Gly	Leu	Glu	Met	Gly	Ser	Val	Trp	Asn	Arg	Val	Gly	Ala									
		195					200					205												
Glu	Val	Thr	Ile	Leu	Glu	Ala	Ala	Pro	Thr	Phe	Leu	Ala	Ala	Ala	Asp									
	210					215					220													
Gln	Gln	Ile	Ala	Lys	Glu	Ala	Phe	Lys	Tyr	Phe	Thr	Lys	Glu	Gln	Gly									
225					230					235					240									
Leu	Ser	Ile	Glu	Leu	Gly	Val	Lys	Ile	Gly	Asp	Ile	Lys	Ser	Glu	Gly									
				245					250					255										
Lys	Gly	Val	Ser	Val	Ala	Tyr	Glu	Thr	Ala	Ala	Gly	Glu	Ala	Lys	Thr									
			260					265					270											
Glu	Val	Phe	Asp	Lys	Leu	Ile	Val	Ala	Ile	Gly	Arg	Ile	Pro	Asn	Thr									
		275					280					285												
Lys	Gly	Leu	Asn	Ala	Glu	Ala	Val	Gly	Leu	Glu	Lys	Asp	Glu	Arg	Gly									
	290					295					300													
Phe	Ile	Lys	Val	Asp	Gly	Glu	Cys	Arg	Thr	Asn	Leu	Pro	Asn	Val	Trp									
305					310					315					320									
Ala	Ile	Gly	Asp	Val	Val	Arg	Gly	Pro	Met	Leu	Ala	His	Lys	Ala	Ser									
				325					330					335										
Asp	Glu	Gly	Val	Ala	Val	Ala	Glu	Arg	Ile	Ala	Gly	Gln	Lys	Pro	His									
			340					345					350											
Ile	Asp	Phe	Asn	Asn	Val	Pro	Phe	Val	Ile	Tyr	Thr	Asp	Pro	Glu	Ile									
		355					360					365												
Ala	Trp	Val	Gly	Lys	Thr	Glu	Glu	Gln	Leu	Lys	Ala	Glu	Gly	Val	Glu									
	370					375					380													
Tyr	Lys	Lys	Gly	Thr	Ser	Gly	Phe	Gly	Ala	Asn	Gly	Arg	Ala	Leu	Ala									
385					390					395					400									
Met	Gly	Lys	Ala	Lys	Gly	Thr	Val	Lys	Val	Leu	Ala	Asp	Ala	Lys	Thr									
				405					410					415										
Asp	Arg	Ile	Leu	Gly	Val	His	Met	Ile	Gly	Pro	Val	Val	Ser	Glu	Leu									
			420					425					430											
Val	Thr	Glu	Gly	Val	Thr	Ala	Leu	Glu	Phe	Phe	Ala	Ser	Ser	Glu	Asp									
		435					440					445												
Ile	Ala	Arg	Ile	Ile	His	Ala	His	Pro	Thr	Leu	Ser	Glu	Val	Val	His									
	450					455					460													
Glu	Ala	Ala	Leu	Ala	Ala	Asp	Lys	Arg	Ala	Leu	His	Gly												
465					470					475														
<210>	210																							
<211>	315																							
<212>	PRT																							
<213>	Neisseria meningitidis																							
<400>	210																							
Met	Met	Ile	Glu	Lys	Ser	Ile	Ser	Ile	Val	Asp	Gly	Lys	Glu	Tyr	Ser									
1				5					10					15										

Val Phe Ala Val Ser His Glu Phe Arg Tyr Thr Phe Asp Glu Pro Ile
 20 25 30
 Leu Val Ala Asp Leu Ile Ser Ser Leu Lys Ala Tyr Glu Thr Leu Thr
 35 40 45
 Ser Ser Tyr Leu Pro Ala Ile Leu Asn Gln Leu Phe Asp Val Lys Ile
 50 55 60
 Gln Lys Ile Lys Val Ala Val Ser Glu Ile Glu Arg Gly Ser Phe Leu
 65 70 75 80
 Glu Lys Leu Ile Phe Asn Leu Phe Phe Lys Asp Glu Asp Ala Tyr Asn
 85 90 95
 Glu Phe Cys Leu Lys Ile Arg Lys Phe Leu Gly Thr Glu Asn Gln Asp
 100 105 110
 Gly Ser Ile Asn Met Ser Lys Ile Ile Met Phe Ala Met Thr Thr Leu
 115 120 125
 Leu Gly Val Gly Ala Gly Tyr Leu Leu Phe Lys Asn Pro Pro Gln Glu
 130 135 140
 Lys Gln Ala Ile Thr Asn Asn Ile Val Thr Val Ile Asn Ala Asp Ser
 145 150 155 160
 Ser Val Ala Leu Asp Gly Glu His Leu Val Ser Val Val Lys Glu Val
 165 170 175
 Thr Gly Ser Ser Lys Gln Lys Thr Ala Glu Asn Val Ala Lys Val Tyr
 180 185 190
 Ala Pro Ala Ser Lys Asn Asn Gly Ser Ile Thr Leu Gly Thr Asp Asp
 195 200 205
 Val Arg Ile Glu Pro Val Ala Gln Gln Thr Val Ala Thr Leu Pro Lys
 210 215 220
 Asp Val Asp Leu Arg Asp Thr Pro Leu Thr Glu Asp Tyr Thr Asp Ile
 225 230 235 240
 Asp Val Gln Ile Arg Ala Thr Asp Arg Asp Lys Asn Ser Gly Trp Tyr
 245 250 255
 Ala Val Ile Asp Gln Ile Val Pro Ser Arg Val Arg Leu Glu Leu Pro
 260 265 270
 Glu Asp Ile Asp Leu Asn Arg Leu Ala Asn Asn Ala Thr Ile Arg Ala
 275 280 285
 Asn Val Thr Val Glu Phe Asp Leu Lys Gln Asn Gly Ser Arg Lys Pro
 290 295 300
 Lys Lys Ile Ile Leu Thr Ser Leu Ser Thr Asp
 305 310 315

<210> 211
 <211> 416
 <212> PRT
 <213> Neisseria meningitidis
 <400> 211

276

Met Phe Ser Lys Ser Val Thr Leu Ala Gln Tyr Asp Pro Asp Leu Ala
1 5 10 15

Ala Ala Ile Ala Gln Glu Asp Gln Arg Gln Gln Asp His Val Glu Leu
20 25 30

Ile Ala Ser Glu Asn Tyr Val Ser Cys Ala Val Met Asp Ala Gln Gly
35 40 45

Ser Gln Leu Thr Asn Lys Tyr Ala Glu Gly Tyr Pro Gly Lys Arg Tyr
50 55 60

Tyr Gly Gly Cys Glu Tyr Val Asp Ile Val Glu Gln Leu Ala Ile Asp
65 70 75 80

Arg Val Lys Glu Leu Phe Gly Ala Ala Tyr Ala Asn Val Gln Pro His
85 90 95

Ser Gly Ser Gln Ala Asn Gln Ala Val Tyr Ala Ser Val Leu Lys Pro
100 105 110

Gly Asp Thr Ile Leu Gly Met Ser Leu Ala His Gly Gly His Leu Thr
115 120 125

His Gly Ala Ser Val Asn Ile Ser Gly Lys Leu Tyr Asn Ala Val Thr
130 135 140

Tyr Gly Leu Asp Glu Asn Glu Val Leu Asp Tyr Ala Glu Val Glu Arg
145 150 155 160

Leu Ala Leu Glu His Lys Pro Lys Met Ile Val Ala Gly Ala Ser Ala
165 170 175

Tyr Ala Leu Gln Ile Asp Trp Ala Lys Phe Arg Glu Ile Ala Asp Lys
180 185 190

Val Gly Ala Tyr Leu Phe Val Asp Met Ala His Tyr Ala Gly Leu Val
195 200 205

Ala Gly Gly Glu Tyr Pro Asn Pro Val Pro Phe Cys Asp Phe Val Thr
210 215 220

Thr Thr Thr His Lys Thr Leu Arg Gly Pro Arg Gly Gly Val Ile Leu
225 230 235 240

Cys Arg Asp Asn Thr His Glu Lys Ala Leu Asn Ser Ser Ile Phe Pro
245 250 255

Ser Leu Gln Gly Gly Pro Leu Met His Val Ile Ala Ala Lys Ala Val
260 265 270

Ala Phe Lys Glu Ala Leu Gln Pro Glu Phe Lys Gln Tyr Ala Lys Gln
275 280 285

Val Lys Ile Asn Ala Ala Ala Met Ala Glu Glu Leu Val Lys Arg Gly
290 295 300

Leu Arg Ile Val Ser Gly Arg Thr Glu Ser His Val Phe Leu Val Asp
305 310 315 320

Leu Gln Pro Met Lys Ile Thr Gly Lys Ala Ala Glu Ala Ala Leu Gly
325 330 335

Lys Ala His Ile Thr Val Asn Lys Asn Ala Ile Pro Asn Asp Pro Glu

277
 340 345 350
 Lys Pro Phe Val Thr Ser Gly Ile Arg Ile Gly Ser Ala Ala Met Thr
 355 360 365
 Thr Arg Gly Phe Asn Glu Ala Asp Ala Arg Val Leu Ala Asn Leu Val
 370 375 380
 Ala Asp Val Leu Ser Asn Pro Glu Asp Glu Ala Asn Leu Ala Lys Val
 385 390 395 400
 Arg Lys Gln Val Thr Ala Leu Cys Asn Lys Tyr Pro Val Tyr Gly Ala
 405 410 415

<210> 212
 <211> 233
 <212> PRT
 <213> Neisseria meningitidis

<400> 212
 Met Ser Ala Arg Glu Asn Ile Leu Ala Lys Leu Lys Lys Ala Asp Ala
 1 5 10 15
 Leu Pro Met Glu Glu Pro Ala Val Phe Asp Tyr Tyr Arg Glu Met Gly
 20 25 30
 Val Ser Trp Gly Ser Glu Val Glu Arg Leu Lys His Trp Ala Ala Ala
 35 40 45
 Met Arg Ala Val Lys Thr Glu Ile Tyr Trp Val Thr Lys Ser Asn Trp
 50 55 60
 Met Gln Val Phe Arg Glu Ala Ala Glu Gly Lys Gly Leu Lys Asn Ile
 65 70 75 80
 Leu Leu Pro Leu Ala Thr Glu His Gly Gln Ile Ala Arg Ala Ala Leu
 85 90 95
 Ala Asp Ser Asn Ile Glu Pro Ile Ala Phe Glu Arg Glu Ile Asp Thr
 100 105 110
 Trp Lys Thr Glu Phe Phe Thr Asn Ile Asp Ala Gly Phe Ser Gly Ala
 115 120 125
 Gln Cys Gly Ile Ala Arg Thr Gly Thr Leu Met Leu Phe Ser Ser Pro
 130 135 140
 Glu Glu Pro Arg Thr Leu Ser Leu Val Pro Pro Val His Phe Cys Leu
 145 150 155 160
 Phe Asp Thr Ser Lys Met Tyr Asn Glu Phe His Asn Ala Val Glu Gly
 165 170 175
 Glu Lys Leu Val Glu Asn Gly Met Pro Thr Asn Val Phe Leu Ile Ser
 180 185 190
 Gly Pro Ser Lys Thr Ala Asp Ile Gln Leu Thr Leu Ala Tyr Gly Ala
 195 200 205
 His Gly Pro Arg Asp Leu Val Ile Leu Ala Ile Leu Pro Asp His Ile
 210 215 220
 Ser Pro Ala Asp Leu Glu Glu Asn Ala

225

230

<210> 213
 <211> 174
 <212> PRT
 <213> Neisseria meningitidis

<400> 213
 Met Ser Leu Asn Lys Val Ile Leu Ile Gly Arg Leu Gly Arg Asp Pro
 1 5 10 15
 Glu Val Arg Tyr Met Pro Asn Gly Glu Ala Val Cys Asn Phe Ser Val
 20 25 30
 Ala Thr Ser Glu Thr Trp Asn Asp Arg Asn Gly Gln Arg Val Glu Arg
 35 40 45
 Thr Glu Trp His Asn Ile Thr Met Tyr Arg Lys Leu Ala Glu Ile Ala
 50 55 60
 Gly Gln Tyr Leu Lys Lys Gly Gly Leu Val Tyr Leu Glu Gly Arg Ile
 65 70 75 80
 Gln Ser Arg Lys Tyr Gln Gly Lys Asp Gly Ile Glu Arg Thr Ala Tyr
 85 90 95
 Asp Ile Val Ala Asn Glu Met Lys Met Leu Gly Gly Arg Asn Glu Asn
 100 105 110
 Ser Gly Gly Ala Pro Tyr Glu Glu Gly Tyr Gly Gln Ser Gln Glu Ala
 115 120 125
 Tyr Gln Arg Pro Ala Gln Gln Ser Arg Gln Pro Ala Ser Asp Ala Pro
 130 135 140
 Ser His Pro Gln Glu Ala Pro Ala Ala Pro Arg Arg Gln Pro Val Pro
 145 150 155 160
 Ala Ala Ala Pro Val Glu Asp Ile Asp Asp Asp Ile Pro Phe
 165 170

<210> 214
 <211> 943
 <212> PRT
 <213> Neisseria meningitidis

<400> 214
 Met Asn Lys Lys His Gly Phe Pro Leu Thr Leu Thr Ala Leu Ala Ile
 1 5 10 15
 Ala Thr Ala Phe Pro Ala Tyr Ala Ala Gln Ala Gly Gly Ala Thr Pro
 20 25 30
 Asp Ala Ala Gln Thr Gln Ser Leu Lys Glu Ile Thr Val Arg Ala Ala
 35 40 45
 Lys Val Gly Arg Arg Ser Lys Glu Ala Thr Gly Leu Gly Lys Ile Val
 50 55 60
 Lys Thr Ser Glu Thr Leu Asn Lys Glu Gln Val Leu Gly Ile Arg Asp
 65 70 75 80
 Leu Thr Arg Tyr Asp Pro Gly Val Ala Val Val Glu Gln Gly Asn Gly
 85 90 95

Ala Ser Gly Gly Tyr Ser Ile Arg Gly Val Asp Lys Asn Arg Val Ala
 100 105 110
 Val Ser Val Asp Gly Val Ala Gln Ile Gln Ala Phe Thr Val Gln Gly
 115 125
 Ser Leu Ser Gly Tyr Gly Gly Arg Gly Gly Ser Gly Ala Ile Asn Glu
 130 135 140
 Ile Glu Tyr Glu Asn Ile Ser Thr Val Glu Ile Asp Lys Gly Ala Gly
 145 150 155 160
 Ser Ser Asp His Gly Ser Gly Ala Leu Gly Gly Ala Val Ala Phe Arg
 165 170 175
 Thr Lys Glu Ala Ala Asp Leu Ile Ser Asp Gly Lys Ser Trp Gly Ile
 180 185 190
 Gln Ala Lys Thr Ala Tyr Gly Ser Lys Asn Arg Gln Phe Met Lys Ser
 195 200 205
 Leu Gly Ala Gly Phe Ser Lys Asp Gly Trp Glu Gly Leu Leu Ile Arg
 210 215 220
 Thr Glu Arg Gln Gly Arg Glu Thr Arg Pro His Gly Asp Ile Ala Asp
 225 230 235 240
 Gly Val Glu Tyr Gly Ile Asp Arg Leu Asp Ala Phe Arg Gln Thr Tyr
 245 250 255
 Asp Ile Lys Arg Lys Thr Arg Glu Pro Phe Phe Ser Val Glu Gly Glu
 260 265 270
 Arg Glu Ser Lys Pro Val Ala Lys Leu Ala Gly Tyr Gly Lys Tyr Leu
 275 280 285
 Asn Asn Gln Leu Asn Arg Trp Val Lys Glu Arg Ile Glu Gln Asn Gln
 290 295 300
 Pro Leu Ser Ala Glu Glu Glu Ala Gln Val Arg Glu Ala Gln Ala Arg
 305 310 315 320
 His Glu Asn Leu Ser Ala Gln Ala Tyr Thr Gly Gly Gly Arg Ile Leu
 325 330 335
 Pro Asp Pro Met Asp Tyr Arg Ser Gly Ser Trp Leu Ala Lys Leu Gly
 340 345 350
 Tyr Arg Phe Gly Gly Arg His Tyr Val Gly Gly Val Phe Glu Asp Thr
 355 360 365
 Lys Gln Arg Tyr Asp Ile Arg Asp Met Thr Glu Lys Gln Tyr Tyr Gly
 370 375 380
 Thr Asp Glu Ala Glu Lys Phe Arg Asp Lys Ser Gly Val Tyr Asp Gly
 385 390 395 400
 Asp Asp Phe Arg Asp Gly Leu Tyr Phe Val Pro Asn Ile Glu Glu Trp
 405 410 415
 Lys Gly Asp Lys Asn Leu Val Arg Gly Ile Gly Leu Lys Tyr Ser Arg
 420 425 430

Thr Lys Phe Ile Asp Glu His His Arg Arg Arg Arg Met Gly Leu Leu
 435 440 445
 Tyr Arg Tyr Glu Asn Glu Ala Tyr Ser Asp Asn Trp Ala Asp Lys Ala
 450 455 460
 Val Leu Ser Phe Asp Lys Gln Gly Val Ala Thr Asp Asn Asn Thr Leu
 465 470 475 480
 Lys Leu Asn Cys Ala Val Tyr Pro Ala Val Asp Lys Ser Cys Arg Ala
 485 490 495
 Ser Ala Asp Lys Pro Tyr Ser Tyr Asp Ser Ser Asp Arg Phe His Tyr
 500 505
 Arg Glu Gln His Asn Val Leu Asn Ala Ser Phe Glu Lys Ser Leu Lys
 515 520 525
 Asn Lys Trp Thr Lys His His Leu Thr Leu Gly Phe Gly Tyr Asp Ala
 530 535 540
 Ser Lys Ala Ile Ser Arg Pro Glu Gln Leu Ser His Asn Ala Ala Arg
 545 550 555 560
 Ile Ser Glu Ser Thr Gly Phe Asp Glu Asn Asn Gln Asp Lys Tyr Leu
 565 570 575
 Leu Gly Lys Pro Glu Val Val Glu Gly Ser Val Cys Gly Tyr Ile Glu
 580 585 590
 Thr Leu Arg Ser Arg Lys Cys Val Pro Arg Lys Ile Asn Gly Ser Asn
 595 600 605
 Ile His Ile Ser Leu Asn Asp Arg Phe Ser Ile Gly Lys Tyr Phe Asp
 610 615 620
 Phe Ser Leu Gly Gly Arg Tyr Asp Arg Lys Asn Phe Thr Thr Ser Glu
 625 630 635 640
 Glu Leu Val Arg Ser Gly Arg Tyr Val Asp Arg Ser Trp Asn Ser Gly
 645 650 655
 Ile Leu Phe Lys Pro Asn Arg His Phe Ser Val Ser Tyr Arg Ala Ser
 660 665 670
 Ser Gly Phe Arg Thr Pro Ser Phe Gln Glu Leu Phe Gly Ile Asp Ile
 675 680 685
 Tyr His Asp Tyr Pro Lys Gly Trp Gln Arg Pro Ala Leu Lys Ser Glu
 690 695 700
 Lys Ala Ala Asn Arg Glu Ile Gly Leu Gln Trp Lys Gly Asp Phe Gly
 705 710 715 720
 Phe Leu Glu Ile Ser Ser Phe Arg Asn Arg Tyr Thr Asp Met Ile Ala
 725 730 735
 Val Ala Asp His Lys Thr Lys Leu Pro Asn Gln Ala Gly Gln Leu Thr
 740 745 750
 Glu Ile Asp Ile Arg Asp Tyr Tyr Asn Ala Gln Asn Met Ser Leu Gln
 755 760 765
 Gly Val Asn Ile Leu Gly Lys Ile Asp Trp Asn Gly Val Tyr Gly Lys

770 775 281 780
 Leu Pro Glu Gly Leu Tyr Thr Thr Leu Ala Tyr Asn Arg Ile Lys Pro
 785 790 795 800
 Lys Ser Val Ser Asn Arg Pro Gly Leu Ser Leu Arg Ser Tyr Ala Leu
 805 810 815
 Asp Ala Val Gln Pro Ser Arg Tyr Val Leu Gly Phe Gly Tyr Asp Gln
 820 825 830
 Pro Glu Gly Lys Trp Gly Ala Asn Ile Met Leu Thr Tyr Ser Lys Gly
 835 840 845
 Lys Asn Pro Asp Glu Leu Ala Tyr Leu Ala Gly Asp Gln Lys Arg Tyr
 850 855 860
 Ser Thr Lys Arg Ala Ser Ser Ser Trp Ser Thr Ala Asp Val Ser Ala
 865 870 875 880
 Tyr Leu Asn Leu Lys Lys Arg Leu Thr Leu Arg Ala Ala Ile Tyr Asn
 885 890 895
 Ile Gly Asn Tyr Arg Tyr Val Thr Trp Glu Ser Leu Arg Gln Thr Ala
 900 905 910
 Glu Ser Thr Ala Asn Arg His Gly Gly Asp Ser Asn Tyr Gly Arg Tyr
 915 920 925
 Ala Ala Pro Gly Arg Asn Phe Ser Leu Ala Leu Glu Met Lys Phe
 930 935 940

<210> 215
 <211> 544
 <212> PRT
 <213> Neisseria meningitidis

<400> 215
 Met Thr Lys Phe Ile Phe Val Thr Gly Gly Val Val Ser Ser Leu Gly
 1 5 10 15
 Lys Gly Ile Ala Ala Ala Ser Ile Ala Ala Ile Leu Glu Ser Arg Gly
 20 25 30
 Leu Asn Val Thr Met Leu Lys Leu Asp Pro Tyr Ile Asn Val Asp Pro
 35 40 45
 Gly Thr Met Ser Pro Phe Gln His Gly Glu Val Phe Val Thr Asp Asp
 50 55 60
 Gly Ala Glu Thr Asp Leu Asp Leu Gly His Tyr Glu Arg Phe Ile Asp
 65 70 75 80
 Ser Thr Met Thr Arg Arg Asn Ser Phe Ser Thr Gly Gln Val Tyr Glu
 85 90 95
 Asn Val Ile Ala Lys Glu Arg Arg Gly Asp Tyr Leu Gly Gly Thr Val
 100 105 110
 Gln Val Ile Pro His Ile Thr Asp Glu Ile Lys Arg Arg Ile His Glu
 115 120 125
 Gly Ala Ala Gly Tyr Asp Val Ala Ile Val Glu Ile Gly Gly Thr Val
 130 135 140

Gly Asp Ile Glu Ser Leu Pro Phe Leu Glu Ala Ile Arg Gln Met Arg
 145 150 155 160
 Ser Gln Leu Gly Arg Asn Asn Thr Leu Phe Ala His Leu Ser Tyr Val
 165 170 175
 Pro Tyr Ile Ala Ala Ala Gly Glu Ile Lys Thr Lys Pro Thr Gln His
 180 185 190
 Thr Val Lys Glu Met Leu Ser Ile Gly Leu Gln Pro Asp Ile Leu Ile
 195 200 205
 Cys Arg Met Asp Arg Thr Met Pro Ala Asp Glu Arg Arg Lys Ile Ala
 210 215 220
 Leu Phe Cys Asn Val Glu Glu Arg Ala Ile Val Gly Ser Tyr Asp Val
 225 230 235 240
 Asp Ser Ile Tyr Glu Cys Pro Glu Met Leu His Asp Gln Gly Ile Asp
 245 250 255
 Asn Ile Ile Thr Glu Gln Leu Gln Leu Asn Val Gln Gln Ala Asp Leu
 260 265 270
 Thr Ala Trp Lys Lys Ile Val His Ala Ile Gln Asn Pro Lys His Thr
 275 280 285
 Val Lys Ile Ala Met Val Gly Lys Tyr Val Asp Leu Thr Glu Ser Tyr
 290 295 300
 Lys Ser Leu Ile Glu Ala Leu Lys His Ala Gly Ile His Thr Glu Thr
 305 310 315 320
 Asp Val Gln Ile Thr Phe Val Asp Ser Glu Asn Ile Glu Lys Asn Lys
 325 330 335
 Gly Asp Val Ser Met Leu Lys Asp Met Asp Ala Ile Leu Val Pro Gly
 340 345 350
 Gly Phe Gly Ser Arg Gly Val Glu Gly Lys Ile Ala Ala Val Arg Tyr
 355 360 365
 Ala Arg Glu Asn Asn Val Pro Tyr Leu Gly Ile Cys Leu Gly Met Gln
 370 375 380
 Ile Ala Leu Ile Glu Tyr Ala Arg Asp Val Ala Gly Leu Lys Gly Ala
 385 390 395 400
 Asn Ser Thr Glu Phe Asp Leu Lys Cys Ala Ala Pro Val Val Ala Leu
 405 410 415
 Ile Asp Glu Trp Gln Thr Ala Asp Gly Ser Val Glu Thr Arg Asp Glu
 420 425 430
 Ser Thr Asp Leu Gly Gly Thr Met Arg Leu Gly Ala Gln Glu Val Glu
 435 440 445
 Leu Lys Ala Gly Ser Leu Ala Ala Lys Ile Tyr Gly Ser Gly His Ile
 450 455 460
 Arg Glu Arg His Arg His Arg Tyr Glu Val Asn Asn Asn Tyr Val Pro
 465 470 475 480

Thr Leu Glu Gln Ala Gly Leu Val Ile Gly Gly Val Ser Ala Gly Arg
 485 490 283 495
 Glu Arg Leu Val Glu Thr Ile Glu Leu Pro Asn His Pro Trp Phe Phe
 500 505 510
 Ala Cys Gln Phe His Pro Glu Phe Thr Ser Asn Pro Arg Lys Gly His
 515 520 525
 Pro Leu Phe Thr Ala Phe Val Lys Ala Ala Leu Asn Asn Lys Lys Ala
 530 535 540

<210> 216
 <211> 163
 <212> PRT
 <213> Neisseria meningitidis

<400> 216
 Met Arg His Ile Leu Ser Val Leu Ile Glu Asn Glu Ser Gly Ala Met
 1 5 10 15
 Ser Arg Val Val Gly Leu Phe Ser Ala Arg Asp Tyr Asn Ile Asp Ser
 20 25 30
 Leu Ala Val Ala Pro Thr Glu Asp Lys Thr Leu Ser Arg Met Thr Ile
 35 40 45
 Val Thr His Gly Asp Glu Gln Val Ile Glu Gln Ile Thr Lys Gln Leu
 50 55 60
 Asn Lys Leu Ile Glu Val Ile Lys Val Val Asp Leu Asn Glu Ser Arg
 65 70 75 80
 Phe Val Glu Arg Glu Leu Met Leu Val Lys Val Arg Ala Ala Gly Lys
 85 90 95
 Asp Arg Asp Glu Phe Leu Arg Leu Thr Glu Ile Tyr Arg Gly Ser Ile
 100 105 110
 Ile Asp Val Thr Asp Arg Ser Tyr Thr Ile Glu Ile Thr Gly Ser Thr
 115 120 125
 Asp Lys Leu Asp Ser Phe Leu Glu Thr Val Gly Arg Ala Gln Ile Leu
 130 135 140
 Glu Thr Val Arg Thr Gly Ala Ala Gly Ile Gly Arg Gly Glu Arg Ile
 145 150 155 160
 Leu Lys Ile

<210> 217
 <211> 371
 <212> PRT
 <213> Neisseria meningitidis

<400> 217
 Met Arg Leu Phe Lys Ser Leu Lys Asn Pro Lys Lys Thr Asp Ala Lys
 1 5 10 15
 Leu Pro Lys Lys Ser Ser Gly Leu Asn Asn Arg Ala Ala Ile Gly Ile
 20 25 30

Asp Ile Asp Gln His Ser Ile Lys Met Val Gln²⁸⁴ Leu Ser Gly Arg Ser
 35 40 45
 Leu Asn Gln Ile Gln Leu Glu Lys Tyr Val Ile Ala Lys Leu Pro Lys
 50 55 60
 Asn Ile Ile Gln Gly Asn Lys Val Gln Asn Tyr Asp Gln Leu Val Thr
 65 70 75 80
 Tyr Leu Gln Gln Ala Tyr Ala Lys Leu Gly Thr Ser Cys Lys Asn Ile
 85 90 95
 Ile Ala Ser Val Pro Gln Asn Leu Ala Thr Ile Glu Gln Leu Thr Tyr
 100 105 110
 Thr Asp Lys Asp Ala Glu Leu Asp Leu Gln Gly Phe Val Glu Ser Ser
 115 120 125
 Ile Ser Glu Val Ser Ser Ile Ser Leu Glu Glu Ala Asn Tyr Asp Tyr
 130 135 140
 Gln Val Leu Ser Gln Ser Ala Ala Gly Glu Ala Val Leu Ala Val Ala
 145 150 155 160
 Ser Arg Lys Asp Glu Ile Glu Pro Leu Ile Asp Ala Phe Asn Ala Ala
 165 170 175
 Gly Met Lys Leu Ser Ala Leu Asp Val Asp Ile Phe Gly Gln Tyr Asn
 180 185 190
 Ala Tyr Ala Leu Trp Ile Asn His Phe Ala Pro Glu Leu Ala Ala Glu
 195 200 205
 Lys Val Ala Ile Phe Gly Val Tyr Ala Ala Gln Thr Tyr Ala Leu Val
 210 215 220
 Ile Gln Asp Gly Lys Ile Leu Tyr Lys Gln Glu Thr Ser Val Ser Glu
 225 230 235 240
 Glu Gln Leu Asn Gln Leu Ile Gln Arg Thr Tyr Gln Val Thr Glu Glu
 245 250 255
 Lys Ala Glu Glu Ile Ile Asn Ser Pro Gln Lys Pro Ser Asp Tyr Gln
 260 265 270
 Glu Ser Val Ala Asn Tyr Phe Asn Gln Gln Ile Thr Gln Glu Ile Gln
 275 280 285
 Arg Val Leu Gln Phe Tyr Tyr Thr Thr Gln Thr Ala Asp Asp Met Thr
 290 295 300
 Asp Ile Lys His Ile Leu Leu Thr Gly Glu Ala Ala Arg Gln Glu Gly
 305 310 315 320
 Ile Ala Gln Thr Val Ala Ser Gln Thr Asn Ala Asp Val Gln Cys Val
 325 330 335
 His Pro Ala Arg Tyr Phe Ala Asp Asn Leu Lys Thr Asp Lys Gln Gln
 340 345 350
 Phe Glu Leu Asp Ala Pro Thr Leu Thr Arg Ala Phe Gly Leu Ala Val
 355 360 365
 Arg Gly Leu

